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# HANDBOOK

OF

# MASSAGE

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BY

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# HANDBOOK OF MASSAGE

## CHAPTER I.

### HISTORICAL SKETCH OF MASSAGE.

A thorough study of the history of the therapeutical meas ures resorted to and known under the general name of mas sage, confronts us with unexpected difficulties. In perusin the books devoted to this subject, we are astonished to mee with such frequent contradictions and paradoxes, although al the books treat of an empirical method which was employe by popular physicians and practitioners. These acted withou preconceived ideas, because massage had been a means of cu ing in a case similar to the one which they had to do wit Scientific interpretations only interfered later on. How di they perform massage?

In olden times, as in our own days, every practitioner ha his own ideas, and these were sometimes so complicated tha real mnemonic feats had to be resorted to in order to retai them. It seems, however, that at different medical epochs, phy sicians applied and prescribed massage for about the sam conditions.

In Greek therapeutics massage held a more important plac than one might be inclined to believe or infer from our tex We know why Hippocrates did not speak of it more often. H had written, or did intend to write, a book on this subject. Ha this book been lost, like so many others? This it is impossibl for us to tell, but it is extremely improbable that the two line alluding to it have been interpolated by a scribe from an earl

period. How was massage known among physicians? It is evident that its progress was not due to the practices delineated in the works of Confucius, nor in Susenta's compilation. It is likewise evident that it was not brought into Europe by Captain Wallis' sailors, on whom friction was tried by young Tahitian girls.

In sprains, massage had for a long time been considered as a most excellent means, far preferable to immobilization and other procedures. Elleaume's,[1] Gerard's,[2] Lebâtard's,[3] Willet's,[4] works, not to speak of many others, are eulogies in its favor.

Estradère[5] adds that it is the most simple means, the most easy one to execute and the most efficient one, because it often effects a cure after the first sitting: one is very seldom obliged to have recourse to it more than twice. The thesis of the author just mentioned was a most instructive plea in favor of massage (1863).

Unfortunately, Estradère at that time had only a theoretical knowledge of it. His ideas are not supported by any personal experience, and the described procedures are so numerous and complicated that from his point of view, massage included the whole medical therapeutics.

In spite of the obtained success, physicians hesitated in adopting it, and massage was scarcely mentioned in medical works.

Public opinion turned against empiricism. Many peopl performed massage, and cured. But all these belonged to tl illiterate class. They did not exactly know why and when th had to perform massage. A method in itself good, but b ly used, is abhorred. From time to time they would obtain r

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[1]) Elleaume : Du massage dans l'entorse. Gaz. des Hôpitaux No. 151–?.

[2]) Gerard : Des frictions et du massage dans le traitement de l' chez l'homme. Gaz. hebdomad., No. 46, 1858.

[3]) Lebâtard : Gaz. des Hôpitaux.

[4]) Millet : Bulletin de therapeutique. Éd. LXXII., p. 76 and

[5]) Estradère : Du massage, son historique, ses manipulation, therapeutics, thèse de Paris, 1863, p. 149–165.

cess; as Berghman says: "A blind hen may sometimes also pick up a grain;" but, then, they did not report any failures. Applications wrongly interpreted lead to catastrophes. Physicians attributed to massage misfortunes which had no other cause than the clumsiness of the empirics.

By taking a great interest in the method, by studying concurrently its procedures and the affections in which it can be employed, by ridding it of superfluous manipulations, so fatiguing to the physician and so unbearable for the patient, Mezger has rendered great services to his colleagues. He, more than anybody else, contributed to the adoption of massage.

We quite seldom find that therapeutical procedures are the direct outcome of laboriously acquired, theoretical ideas. Scholars detest practice. When, however, a man who has started by this latter process finds himself confronted by a problem which he is unable to solve, he then feels the need of extending his knowledge; the technologist then becomes an experimentalist. This was the case with Mezger. The first and only work that bears his name is a modest essay, dating from 1868. Nothing did then foreshadow that an author who continually seeks shelter behind Tilanus, Van Geuns, Vrolite, and who, instead of deciding the question, timidly quotes Gerard, Elleaume or Lebâtard, would at some future day become the head of a school.

Mezger's thesis[1] begins with a protest against the abuse of gymnastics. It is only at the end of the preface that he speaks of his subject.

It is probable that Mezger had seen numerous cases, and that in collecting them he would have been able to adduce statistics full of interest. But he has not even tried to do this.

His work contains very short, ingenious sketches. The only arguments the author brings forward in their favor are contained in the cases he remembered. Mezger is at the head of a

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[1]) Mezger. De Behandeling van Distorsio pedis met Frictien. Amsterdam, 1868.

school. His reputation has become established throughout Europe. The most extraordinary thing in his career is the absence of all, even scientific, publicity. He occupied no official position, and his name has hardly been pronounced in the learned societies. He had written but very little. Invalids flocked to him, because he cured; pupils came to learn to cure like he did. All of them were physicians from the Scandinavian countries,

Teaching was as objective as it could be: the master worked, the assistants looked on, and later on they, too, worked. It was a real apprenticeship, in which one combined the dry and solemn lessons and all the pomp inherent in universities.[1]

I rejoice in having been one of the first to spread the author's name and his method in France. It is twelve years since the first edition of my book appeared. Since that time practitioners of very high standing, like Berne, Gautiez, Rosenblith, have been seriously occupied in Paris with massage. Very good articles and excellent memorials, indeed, have appeared in the newspapers. In Germany, the impulse which I pointed out in 1884, was continued. The works of Zabludowski, Schreiber[2], Reibmayer[3], Hünerfauth, Mosengeil[4], and lately Bum's[5], have been added on to those existing formerly. Massage has become a classical procedure, which physicians use, after having scrutinized its usefulness, like that of any other therapeutical method. I would only be too happy if in some measure at least I had contributed to its popularity.

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[1]) Since 1880 an enormous practice, which was daily increasing, has made it impossible for Mezger to receive more pupils.

[2]) Schreiber. Traité pratique de massage et de gymnastique médicale, 1884, in 18.

[3]) Reibmayer. Le massage par le médecin, physiologie, manuel operatoire, indications, Vienna, 1883—1884. French edition by Leon Petit, 1885.

[4])Mosengeil. Ueber Massage, deren Technik, Wirkung und Indicationen. Archiv für klinische Chirurgie, Berlin 1876. Band XIX.

[5]) Handbuch der Massage und Heilgymnastik für praktische Aerzte von Dr. Anton Bum, Wien 1896.

## CHAPTER II.

## OPERATIVE (MANUAL) PROCEDURE.

*Physical qualities necessary to the masseur.—Preparative steps.—Lubrication.—Shaving of the regions that are to be massaged.—Mediate massage.—Necessity of taking into account the individual sensibility.—Incidents of lhe beginning: ecchymotic spots.—Warnings to the invalid.—Daily sittings.*

The method which we are about to describe consists altogether of four procedures: Effleurage, friction, petrissage and tapotement.

These procedures have yielded results satisfactory enough, and I have no need of complicating them. Mezger's four procedures, which have been highly spoken of, have been sufficient for me; I do not mean to say that I have always applied them in the same way, neither do I want to enter into details as regards the modifications which must be used in a given case. The clinician has to make his selection. You have made a positive diagnosis, and you have concluded that massage is indicated. Follow the same method in choosing the procedure, and modify it according to circumstances; that is all. I no more believe in uniform, unalterable indications and formulae, than in panaceas.

A certain amount of strength is required. Those whose flexor muscles of the thumb, for instance, possess only a relative energy, would act wisely in never attempting to massage old, muscular indurations. One must knead a given surface of circumscribed area thoroughly and for a long time. If one is not sufficiently strong by nature to do this, one only tires oneself, and no results are obtained.

Besides, the results we obtain after long practice are always better than those to be achieved at the beginning. This is easily explained: Practice and training give a steady hand, which we cannot acquire by any other means. When we begin, our education is not completed; the muscles which we have to use are not sufficiently developed and under control. We work too fast, our strength is wasted, and when we are most in need of it we are exhausted.

The masseur ought to be ambidextrous. He must be able to use his left hand, if the right one is accidentally immobilized or tired. I generally use the latter, except in circular and abdominal massage.

Lubrication of the integument is necessary. Thanks to this latter precaution massage is more easily tolerated. The application of the greasy substance demands certain attention; when there is too much of it the hand slides over the surface of the skin, and the manipulation will have no influence on the deeper tissues.

It is advantageous to shave off the hair. In persons whose sensibiliy is not markedly developed, this may seem rather superfluous. They tolerate massage without complaining, even when the parts are not shaved, but it is never wise to rely only upon this. The mechanical irritation is liable to produce an inflammation of the hair follicles, which sometimes calls for an interruption of the treatment. It may also produce erythema and urticaria.

The best lubricator is vaseline. Only a small quantity is necessary. At the ordinary temperature it will not overflow the vase containing it, and it does not dirty the skin or grow rancid, like oils, or like pomatums containing hog's lard.

At different times mediate massage, by interposing between the integuments and the fingers a piece of cloth, gauze or flannel, has been resorted to. Those who proposed this method of massaging have not been able to vindicate it by any serious arguments. A transparent can in no way alleviate the pain. Is it that they want to spare the patient's mod-

esty? Then they might as well propose to us to make the vaginal examination with a gloved hand.

We have to take into consideration the individual sensibility and avoid inflicting pain as much as possible. It is well to begin very gently, to grade the manipulations so that the invalids get used to them. I repeat what I have often said: Violence disheartens, and does not lead to any results. Nearly always tolerance is soon established, so that the patient declares that he does not suffer so much at the end of one sitting as at the beginning; we are then able to display a force which would at first have seemed unbearable. When we massage the muscles, they must be relaxed. This is indispensable, if all the deep parts are to be reached. We must try to overcome the natural tendency which many people have to contract the muscles when they are touched. Everything which might possibly hinder the ascending venous current ought to be removed. Garters must never be kept on when the foot, the tibio-tarsal articulation, or any other part of the leg, is to be massaged.

Inexperienced masseurs are apt to cause bruises. This will happen less frequently the more experienced the hand is; it is, however, not always possible to avoid them. When we have to deal with old inflammatory exudates, or indurations of the muscular tissue, we are obliged to exert a great deal of pressure with the thumb. At the first this will produce discoloration and small ecchymoses; these will, however, soon be reabsorbed and not lead to the production of others during the treatment. We can hasten their disappearance by means of slight friction. However insignificant this annoyance may be, it is always better to anticipate it, and to warn the patient thereof, so that he may not be frightened. Ecchymoses is specially liable to be produced in women whose paniculus adiposus is developed to a marked degree, and in persons having a delicate skin. In old people a great deal of gentleness in indicated, or else we are liable to provoke big ecchymotic spots. Precautions to avoid these accidents must especially

be taken when an extensive surface has to be massaged. Otherwise we are obliged to interrupt the treatment.

The patient ought to assume the least fatiguing position, as well for himself as for the masseur; uneasy attitudes are good for nothing. We must take as much care as possible to place the peripheral parts on a slightly higher level than the trunk, so as to facilitate or aid the venous and lympathic currents, thus favoring the force of gravity, instead of impeding it.

Chronic myopathies and arthropathies require energetic massage. Sometimes, after the first sitting, the patient will complain of more suffering than before treatment was begun. Then the affection was but a sort of uneasiness and now the massaged region is really painful. It is a pain that might be called contusional, if such an expression could be used. It has for its cause the tearing up of old adhesions, and particularly slight, but numerous, lesions of the skin and of the subcutaneous cellular tissues, and the stretching irritation or compression of the terminal nerve branches by small extravasations. The patient ought, furthermore, to be told that it is a phenomenon which is inherent in the treatment, and that it will last perhaps six days, a week or a fortnight. I generally give one sitting a day in chronic conditions, and two to persons who do not live in New York, and who wish to stay here only a short time. One ought to leave then a rather long interval between the first and the second sitting. In acute cases at least two sittings a day are necessary. It would not at all be improper to have more, if it were possible. The duration of each séance depends upon the severity and site of the affection. Generally it lasts 5 to 8 minutes, but 10 minutes and more are not too much in acute affections. In irritable women, it is best to stop the treatment during the menstrual period. This interruption is, besides, indicated in sciatica, in myositis of the gluteal region, etc.; it is indispensable in abdominal or pelvic massage.

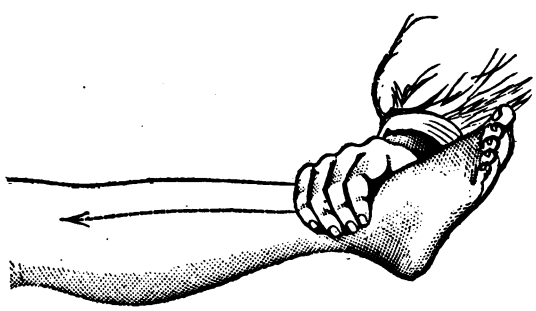
The practitioner ought always to spare his strength and try

to spend as little as possible of it in producing the desired effect.

It has seemed useful to me to preface these general remarks on the application of the method before entering more fully upon a discussion of the operative manual proper.

We are now going to analyze the four procedures, of which we have only given the names: then we shall enumerate a number of useful, if not indispensable, accessories, to complete the cure after massage is ended.

I. *Effleurage.*—Is generally performed on large surfaces, with the flat hand, or with the base of the palm of the hand; on small ones, with the tip of the thumb alone, or with that of two fingers (thumb and forefinger). One is rarely obliged to use both hands at once. Of all manipulations, this one is the most often used. It is very gently performed on the



integuments, in all acute affections, in order to obtain an amelioration in the venous and lymphatic circulation. Effleurage is a very powerful antiphilogistic means; it activates the reabsorption of interstitial exudates, or exudates in serous cavities; it is of great value in atrophies, by improving the circulation and by favoring organic transformation in a given region and by modifying in return the vitality of the tissues.

II. *Frictions*—properly so-called, are best performed by the tip of the thumb. One has recourse to it in old exudates, that have become organized, either completely, or, at least, to a large extent, in hyperplasia of the connective tissue, in quick-

ening of articular capsules, and in chronic myositis. The object in view is to cause the reabsorption of the exudate, or to make it lose its vitality, so that it may undergo fatty degeneration. The exudate must be disorganized and reduced to very small fragments. Friction with the extremity of the thumb is done within a circumscribed area, but it needs a great deal of strength.

III. *Petrissage.*—This manipulation is used in chronic inflammatory tumefactions affecting a muscle or a group of muscles. We often find them at the border of the trapezius in cases of cephalalgia, which we have already had the op-

portunity of studying.[1] If possible, we take hold of that part of the tissue which we intend to act upon with the thumb and one or several fingers, and try to separate it as much as possible from the neighboring parts; we then knead and compress it. If we operate on a voluminous part, we ought to use both hands, which are to act separately the same way.

IV. *Tapotement.*—I apply this name to the fourth manœuvre, because it is easy to understand, and gives us a good idea of the procedure, although I do not know whether this term has ever been used by French or foreign writers in speaking of massage. Tapotement is used either alone or in connection with the other procedures. It is a good way of in-

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(1) Traitement de la migraine par le massage. Paris, 1885, in 8°.—Cephalalgia and Massage. New York, 1896, in 8°.

creasing the vitality of atrophied and paralyzed muscles; it is useful in some articular or periarticular affections, especially in chronic, torpid tenosynovitis. In the latter case it is necessary to call forth an energetic reaction, in order to relieve congestion. With this in view, tapotement is especially indicated after friction has been employed in chronic myositis. Various instruments have been considered useful to employ, like small steel hammers, which are slightly heated; wooden or india-rub-

ber percussion hammers, bundles of goose quills. The latter are, however, useless; the hand alone is quite sufficient, and it fully answers the indications of a given case. Two other accessory manipulations, borrowed from the Swedish gymnastics, may be conjoined with tapotement; they are pressure and trepidation on the different parts of the nerve. These have been of great service to me in neuralgia of the scalp and face, but can only be used on relatively superficial nervous filaments.

Massage allows of adjuvants, which it is useful to employ, in order to facilitate its action or to complete it. Every time one has to deal with a rheumatoid affection, thermal medication is indicated. In such a case massage is an auxiliary of the general treatment. It is only directed towards morbid conditions. If it was first tried and yielded good results, one should nevertheless advise the patient to submit to general

treatment, as this alone can prevent relapses. Hydrotherapy is only useful in the case of nervous irritability. If atrophy or slight palsy exists, one ought to use electricity. Active and passive movements almost necessarily belong to the province of massage.

Mezger's influence on the treatment of acute or traumatic affections of joints or their environment has been enormous. Formerly, immobilization was the basis of all therapeutics; it was the means of curing painful inflammatory complications. One expected by means of it and with the aid of time to cause absorption of hemorrhages and exudates. We have seen how plentiful the accidents were that were produced by the old procedures. Mezger declared himself as a strong opponent. We shall see what doctrinal struggles arose in regard to joint affections, until at last the innovators got the best of it. The fervent promulgators of this system went even a little too far. Mobilization, as well as immobilization, has certain indications which it is never prudent to lose sight of. A reactionary period has, however, set in. Let us hope that it this time will bring us back to within the limits of truth, that in future one will proceed more methodically, and thus be enabled to demonstrate more precisely by cases in which a certain procedure is good, and fulfilling its mission.

Before recommending to the invalid the exercise of one or the other group of muscles, one must prepare these muscles for their new task; that is to say, active movements must be preceded by properly performed passive ones. These latter are indispensable in most articular affections, caused by fractures which have been submitted to long disuse. Thanks to the energetic passive movements, we are able to distend or tear up adhesions, and able to overcome old retractions, prevent or destroy accidental attachments of the tendons to their sheaths. Another manœuvre is often with equal advantage derived from gymnastics. The patient makes an effort to produce a movement which the physician opposes, or else he attempts an energetic movement which the patient resists. This

manœuvre is often useful, but particularly so in muscular atrophies.

Massages is a therapeutical agent; it is employed in order to alleviate pain, and, above all, to establish a cure. Sometimes, too, it is rendered serviceable for diagnostic purposes. Swelling and infiltration of fissures do not permit us to confirm the diagnosis of a fracture. We have observed that by the aid of effleurage one may accomplish the disappearance of these phenomena. The differential diagnosis is soon established, and the proper measures may be taken. Thus this becomes an application of some value.

## CHAPTER III.

## PHYSIOLOGICAL ACTION OF MASSAGE.

*A glance at interstitial absorption.—Mosengeil's experiments.—Action of massage on the vaso-motors, on muscular contractility, on the nerves.*

When by careful observation the efficacy of massage had been demonstrated in several affections and morbid states which had nothing in common, apparently, at least, it became desirable to explain its action. Empiricism paved the way, which later on was widened by reasoning and experimenting.

During the last century already it had been noticed that friction accelerates the venous circulation and diminishes existing stagnation.

If we examine, to anticipate a little, the affections in which massage had yielded the best results, in which it had been most used and most recommended, we may say, generally speaking that it was in cases where the normal proportions of the tissues or their elements were altered. In sprains, we find vascular ruptures, and sanguineous effusions. The presence of hemorrhages, or extravasated leucocytes, in a region, gives rise to disturbances if their absorbtion requires a long time. In hyperplastic arthritis, articular rigidity, hydrarthrosis, inflammation of the tendinous sheaths, we have to deal with new solid or liquid products, and we can only expect an entire functional restitution, if we cause them to disappear. From this point of view, massage is really useful. It re-establishes absorption, if it has momentarily been suspended. In other cases, again, it stimulates and regulates it. Its anæsthetic action is but a consequence of this property.

The first condition which is necessary to obtain a clear idea of the physiological action of massage is to become familiar with the actual doctrines of the nutrition of the tissues, of which absorption is one of the factors. The living cell is an organic centre, which undergoes development, lives and then dies. To the cell corresponds a liquid atmosphere that furnishes the necessary material for its function.

Certain liquids are as indispensable to organic elements as salt water is to the fish, fresh water to mushrooms, vinegar to the mycoderma aceti. They contain water, albumen and salts. No doubt, their composition varies according to the tissues, but we do not know anything of the differences they present. It is from these liquids that the cells derive their nutritive material. These liquids are known under the generic name of "parenchymatous juice." This latter is absorbed by the tissues. They retain it with such an affinity, that it is impossible to isolate it by mechanical processes. To this imbibed liquid the tissues owe their essential properties. Let us compare a piece of tendon, of cartilage or of connective tissue, in the normal state, with a fragment that by dessication has lost its imbibed water. The volume, color and consistency, in a word, all that may be rendered manifest by the naked eye, has been altered.

One might, to a certain extent, compare the liquids contained in the imperceptible lacunæ to the crystallization water of certain inorganic bodies, with this reserve, however, that the proportions of the former are not fixed and determined, like those of the latter. The part which such liquids play in our economy is easily perceived when we reflect that most tissues contain more than 75 per cent. water.

The parenchymatous juice, properly so called, ought not to be confounded with the "imbibed liquids." By this former term we designate that liquid which one is able to derive by mechanical pressure. No precise boundary line can be drawn as it would be quite useless; one may quite well suppose that the changes in the parenchymatous juice are attended with

corresponding changes in the imbibed liquids, and that these latter are more diluted, in consequence of a greater affinity which the organic particles have for water than for the principles which it dissolves.

The parenchymatous juice is contained in cavities only perceptible with powerful optical instruments. It is found in nearly all parts of the body, but above all abounding in connective tissue, which may be considered as a real reservoir of parenchymatous juice. These spaces, called lymphatic spaces, are of most numerous shapes, as lacunæ, channels, sacks, etc. As regards their size, the same diversity exists. Sometimes they are only visible through the microscope, at other times they are of sufficient size to contain the most voluminous viscera in the economy, as the peritoneum, the pleura, the pericardium, etc.

Having obtained this conception of the parenchymatous juice and the part it plays, it is easy to deduce from it the importance of the circulation. It is only because we have to deal with a living element, whose composition is modified, that the cell does not exhaust this medium. An animal cannot indefinitely live in a small room, hermetically sealed up; when the exhaled air reaches too large a quantity, hæmatosis becomes impossible. A periodic renewal of the air is necessary; that is to say, an addition of respirable elements and an evacuation of the others. The phenomena in the interior parts of the tissues are exactly similar. The terminus of the nutritive channels is the capillary plexus; the channels of evacuation are the veins, and especially the lymphatics. The difference in pressure in the interior of the centripetal and centrifugal vessels play such an important part in the flow of the liquids, that it cannot be altered without impeding the current. If the venous tension is increased beyond a certain coefficient, the lymphatics suffice no longer to accomplish their task, and the region becomes œdematous. The same phenomenon is produced if these lymphatics themselves are altered and have become partly impermeable. When it is desirable to obtain very quickly œdema

of a limb by venous compression, one ought to pass a ligature around a big lymphatic trunk, as has been shown by Cohnheim. Massage, which is, as we have already said, a powerful adjuvant to absorption, acts on the venous and especially on the absorbing system. It accelerates the current of the liquids in all directions, and by diminishing the tension in one part facilitates, by the production of a sort of a vacuum (suction force), the circulation in the next succeeding one. This theory will allow us to understand most phenomena that we are going to study, and which will justify the manœuvres resorted to, though they may seem strange; still their application will present difficulties. It is particularly with articular affections that we will have to deal. Massage acts on absorbing vessels, but we know scarcely anything about the lymphatics of the joints. What is their origin? How do they behave as regards the synovial fluids? Do they end in cul-de-sacs, without epithelium, as was generally believed a few years ago, or do they open into the cavity by stomata?

When Mosengeil set to work to study the physiological action of massage, he stood amazed when confronted with all these problems. As histology had taught nothing, experiment alone remained.

Mosengeil's experiments will forever remain classic, because they have thrown a new light upon massage and the origin of articular lymphatics. Besides theoretical difficulties, there are technical ones. If you desire to study the influence of massage on the progress of arthritis, for instance, it is quite a simple matter; take two animals, each one having an arthritis of the knee; massage one of them, and let nature take care of the other. But here the difficulty arises. In some animals suppurative inflammations are produced, in others arthropathia, followed by the formation of caseous products, with alternating retrogression and exacerbation. In both cases the mechanical treatment is contra-indicated. If it is impossible to anticipate the provoked inflammation, another experiment remains for us. Introduce into two similar joints a colored

liquid, whose progression it is possible to observe with the naked eye and with the microscope. The selection of such a liquid is not on easy one. Vermillion grains are too big and angular, and when filtered the chemical products are colorless. Mosengeil, after considerable meditation, chose India ink. This must be of such fine and good quality that its dilution is uniform throughout, without containing any small particles and without the least sediment.

As soon as the solution had been prepared, a sufficient quantity was injected into the two femoro-tibial articulations of a rabbit; one of them was massaged, the other one not. The result of Mosengeil's experiments were always the same. On the massaged side the diffusion of the liquid took place rapidly; it was propelled into the lymphatic vessels and plasma spaces of the thigh, the direction being from the periphery to the centre. On examination of the unmassaged joint a most striking contrast was found. The joint remained distended. In only one case was there found a lymphatic ganglion of the thigh impregnated with the fluid. But one ought not to conclude from this that the affarent vessels had drawn the liquid into the synovial cavity.

Repeated abundant injections had caused a tumefaction o the knee. This pressure, due to the increase of the liquid, h not, however, as massage had done, driven the colored stance into the absorbing vessels. It had infiltrated pl where it found the least resistance, namely, the neighbo connective tissue and that which separates the muscles leg. It is possible that the movements and the action force of gravity favored this evolution; it is also possi traces of the India ink found in a ganglion of the thi brought there by lymphatics of the infiltrated interst ambiguity is possible in the interpretation of these f sage had driven the material into the centripetal ve stimulated its absorption to such an extent that t comparison between the massaged side and the ot animal was not secured; it was allowed to run an

the muscular contractions were as active in one as in the other limb. They favored the progress of the liquids in the right just as much as in the left lower extremity. Another argument in favor of our hypothesis is this, namely, that the operative procedure is of a serious importance. In some cases where massage was performed by unskilful hands there was no liquid in the lymphatic ducts, but simply a diffusion into the cellular tissue.

From what precedes, we may conclude that massage is an energetic agent; it sometimes brings about complete resolution, but always favors the absorption of the preformed products, which it directs into the lymphatic centripetal vessels. Procedures which at one time may have seemed purely empirical, are really rational.

Mosengeil was the first one, I believe, to undertake researches with a definite purpose in view, namely, to no longer study the physiology of one or other tissue, and the manner in which it reacts after various excitations, but to see in what massage really consisted, to discover the difference between absorption and diffusion of a colored substance, dissolved in a limb which has been massaged, and in one which has not.

This difference is as clear as it can be. In the first case we have had processes comparable to pathological ones, the foreign material has been absorbed and transported. It is easy to understand what would have happened if, instead of India ink, a poisonous substance had been introduced. In the second case it is useless to suppose the interference on the part of any vital power, the liquid permeated the connective tissue by inhibition in the same way as if it had been infiltrated in any other waft. These facts do not stand isolated; experiments have yielded results. It was easy to foresee that men would endeavor to complete them.

Sturm and Salis have obtained exactly the same results as Mosengeil. Reibmayer and Haffinger have extended their experiments on articular synovials to the peritoneum membranes. They injected water into the peritoneal cavity of sev-

eral rabbits; one of them was massaged (petrissage of the abdomen) for ten minutes, and another one was left alone. An hour afterwards both were killed. In the case of two other rabbits, massage was given for two consecutive hours as long as possible, and then they were killed. During the first hour there was less reabsorption in the massaged rabbit than in the other. The modifications, in the shape of abdominal pressure and aspiration, resulting from the movements performed during the first hour, had altered the conditions during the second. Here are the results as Kleen has recapitulated them:

| Moment. | Proportion per cent. of the weight of the water compared to the weight of the reabsorbed body. | |
|---|---|---|
| | Without massage. | With massage. |
| 1st hour..... | 4.57 | 9.09 |
| 2d hour..... | 5.83 | 1.29 |
| Total for 2 hours..... | 10 40 | 10.38 |

Massage modifies the absorption in the interstices of the tissues, as well as in serous surfaces; several factors contribute to it. We have sufficiently insisted upon the prominent part which the lymphatics play. The sanguinous current does not remain inactive, the pressure exerted on the veins hastens their depletion and diminishes stagnation, if there is any. It has been said that something similar to what happens in the suction pump is produced. I would rather compare it to the classical aspirators used by physicists. The more rapid the current is, the more energy is developed by aspiration. But is there any advantage in massaging? The arterial circulation is centrifugal, and our frictions are directly opposed to it. No doubt about this; but the arterial trunks are deeply seated, their walls have a contractility of their own, so that, fortunately these slight and temporary obstacles are easily overcome. The vis a tergo remains exactly the same in the capillary system, whether one massages or not. The propulsive force

remaining constant and the venous tension diminishing, the resultant is an increase of the arterial circulation in a given region and a diminution of the congestions. We may consider the isolated cell as a complete apparatus, endowed with a marvellous power of adaptation. If the movements in the living atmosphere surrounding it are rapid, its action will be most potent and sure. The circulation is easier, the absorption is improved, the chances of exudation, transformation and organization of the exudate diminishes. It is also possible that when an exudate does exist, it may entirely disappear. In order that this may take place, an additional intervention, which we have not yet spoken of, is necessary.

We have placed before us the most simple hypothesis. We ought not to break a fibre, nor reduce a mass to fragments. Instead of massage, we might have written effleurement. Practitioners modify their methods to suit the cases; if they have to deal with tangible and definite lesions, they do not only pass the ball of the thumb or the palm of the hand lightly over the surface of the body, but they use friction and petrissage; and this, simply, because absorption cannot be accomplished without preliminary fragmentation. The acceleration of the lymphatic current is not sufficient to cause an old, organized exudate to disappear. The latter must be brought to a very fine state of division, very much like diluted India ink. Its particles must be small enough to be received by the mouths of absorbing ducts, and it must undergo partial fatty degeneration. Energetic massage produces all this. There is another advantage to be derived from massage, that of destroying the capillary vessels which nourish the exudate.

The acceleration of the blood current is still more increased by the intervention of the nervous system. Sometimes also by that of the muscular elements.

Very often when we have to deal with muscular lessions we have recourse to tapotement. We have already mentioned how this is performed. The infliction of these successive slight traumatisms is the best means of producing excitation. Schiff,

Kühne, Kölliker, have shown that the mechanical irritation is sufficient to provoke contraction of the muscular fibres quite independent of the nervous system. This is quite an excellent means of accelerating the circulation.

Zabludowski has proven by an ingenious experiment that massage can cause rapid disappearance of all fatigue.[1] A person at rest supported, with the arm flexed, a weight, until the arm was fatigued; effleurage was performed for 5 minutes, and at the end of that time this same person was able to perform more muscular labor than before. On the other hand, if no effleurage is resorted to, one is obliged to wait at least a quarter of an hour before being able to resume service. The contractions produced reflexly after massage are more powerful than before. This is another remark of Zabludowski. It does not have any influence on the reflex excitability of the spinal marrow, but as we increase the power of the muscles, so do we render their contractions more powerful.

E. Kleen tells us that a friend of his, a leader of an orchestra, has his arm massaged by effleurage every time he conducts his musicians for considerable time; he thus experiences far less fatigue than if he did not have recourse to this measure.[2]

This action on fatigue may also be explained by the assumption that absorption is increased. This sensation of fatigue occurs in consequence of the oxydation of the tissues and of the accumulation of phosphates, carbonic acid gas and lactic acid. If their disappearance is hastened, fatigue ceases sooner than it would by rest alone.

Physiology explains the action of massage on neuralgia, as well as that of pressure, tapotement and trepidations, along the course of the nerves. These manipulations I often had recourse to, especially in neuralgias of the forehead or the face. Slight pressure on the nerve provokes its excitement and intensifies the pain, whereas very firm pressure is followed

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(1) Zabludowski. Die Anwendung der Massage für die Chirurgie und ihre Grundlagen.

(2) Kleen. Handbok i massage, 1st Häft, p. 38.

at first by numbness and then by anæsthesia. The same thing takes place with the motor nerves. Tigerstedt has shown that their excitability is augmented by a very slight pressure, and diminished or entirely suppressed by a strong one.[1]

We shall add no further remarks on the physiological actions. It was simply our intention to give a short sketch in this chapter, and to show the results which have been derived from experiments. In our more minute discussion of the applications of massage we shall try to explain these results and find a cause for the facts revealed by clinical medicine.

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(1) Tigerstedt. Studien über mechanische Nervenreizung. Helsingfors, 1880.

## CHAPTER IV.

## MASSAGE IN DISEASES OF THE JOINTS.

It is indispensable to begin with the joints, in order to demonstrate the therapeutical applications of massage. It is, indeed, in these affections that it has been most often employed, and there are few arthropathies in which it has not been used. Even those who have most refrained from its employment, admit its beneficial effect in chronic cases. In order to examine all indications and explain its mode of action, it would be necessary to review nearly the whole pathology of joints; we cannot undertake this task. We shall glance at the principal diseases treated by massage and show what has been achieved and what may be expected from it. We shall examine into the joint affections in the following order:

1, Traumatic affections (sprain and luxation); 2, acute and chronic inflammatory affections; 3, diathetic diseases (rheumatism, dry arthritis, gout) 4, secondary affections (articular stiffness); 5, neighboring affections, particularly those of the serous, peri-articular and sub-muscular sacs. We shall study tenosynovitis, together with the muscular system.

### FIRST SECTION—MASSAGE IN TRAUMATIC AFFECTIONS O THE JOINTS.

1. SPRAIN.—Views of some authors on the action of massage in sprains.—Opinions derived from statistics, according to whether massage was performed or immobilization.—Precaution necessary in massage.—Observations relating to sprains in different joints, viz.: tibio-tarsal articulaticns, articulation of the knee, hip and shoulder.

Is the employment of massage in a sprain rational? If we were supplied with neither statistics nor facts, could we suppose that massage was serviceable in early traumatic affections, that it attenuated them and facilitated their disappearance?

Sprain is a popular term, indicating morbid symptoms of an injury or consequent soreness from strain of a muscle, by too great traction upon it, and of traumatic origin. Sometimes a sprain is only an acute traumatic tenosynovitis, affecting the flexors, the extensors of the toes and the long lateral peroneus, or other muscles; sometimes there exists at the outset but an irritation, consequent upon the traction exerted during the accident.

Pathological anatomy teaches us but little. We have succeeded by the aid of Bonnet's experimental researches[1] and by analyzing the symptoms in arriving at the conclusion that in slight cases there was an exaggerated distension of the ligaments, whereas in the more severe ones these were tears, vascular ruptures and sanguineous extravasations. The constant clinical phenomena are the following: At the beginning, ecchymosis, pain and functional weakness; later on inflammatory conditions, peri-articular œdema and stiffness of the joint. Nearly all are caused by the same etiological factor, namely, primary sanguineous effusion. The blood acts as an irritant. It hinders the reunion of the tissues and calls forth unequal reactions. We know, as Mosengeil's experiments have shown, that massage hastens reabsorption. Pressure properly performed on a joint, promotes the introduction of the liquids into the absorbing vessels and by stroking their diffusion in the body is hastened. "It is possible," says Philippeaux, "to transform a circumscribed and thick effusion into a general infiltration, or, rather, into a large, thin, sanguineous sheet, ex-

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(1) Bonnet (from Lyon). Traité des maladies des articulations. Paris, 1845. Traité de therapeutique des maladies articulaires. Paris, 1853.

tending from the extremity of the limb towards its base, and disseminated throughout the subcutaneous cellular tissue, where venous and lymphatic radicles are found. These, as we know, are active media for interstitial absorption."[1]

Thus we perceive that massage is absolutely indicated in sprains. It was used long before the mechanism of its action was understood.

Poteau said that one was able, by this means, to cure it in an extemporaneous way. "I do not know," said he, "what accounts for the failure surgeons generally experience in this trifling undertaking, inasmuch as it is left to inexperienced people, and they do it all right"[2]. This has been pointed out by several contemporary writers: "Massage," says M. Duplay, in treating of the chapter on sprains, "has most often been left to bone-setters," and Hüter adds that this has been a fountain of wealth to them. If they have a greater reputation in treating joint diseases than the physicians, it is because these ignore the rational principles of their treatment."[3] The reproach is, to a certain extent, merited. The truth is that one has heard massage vaguely spoken of and, therefore, distrusts it. The success obtained by empirics, lauded beyond measure, has, perhaps been more injurious than useful to the treatment; they have had striking failures, because the indications were badly interpreted and because they left luxations without reducing them or prevented the union of the fractures. Boldness, and a certain amount of dexerity, alone do not suffice to prevent such accidents.

"In performing massage slowly, prudently and gently," says Mr. Mullier, "I cure without provoking any great pain, contrary to the bone-setters. I was told by an officer in my regiment, who had been massaged by the man of Thelus,

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(1) Philippeaux. Etude pratique sur les frictions et le Massage ou Guide du médecin masseur. Paris, 1870.

(2) Estradére op. mentioned, p. 156.

(3) Hüter. Klinik d. Gelenkkrankh..—Pitha und Billroth. Handbuch der Chirurgie.

that the pain was generally so intense as to be beyond description."[1] Bonnet relates the case of a man treated by a young and clever masseuse for sprain of the knee. He was cured after one séance; but the operator was so merciless that the poor patient fainted three times during the treatment.

"If a woman's hand," adds Mullier, "can inflict such pain, what term shall we apply to the martyrdom the patient has to suffer when he is massaged by a robust peasant, who is convinced that he cannot use too much force in performing his duties!"

Many surgeons hesitate in using massage, which is left to empirics, who cure or harm at random. There is only one way of overcomng this indifference, and that it is by proving that with the help of massage we can cure much more quickly and better than by immobilization or similar appliances. I have often had instances of it. A person takes a false step, which produces a slight tibio-tarsal sprain. He cannot walk, and is obliged to stay in bed. Compresses, wrung out of cold or hot water, are applied, and the leg is immobilized for several weeks. The same person suffers another sprain, of the same severity, in the same joint, and he is cured within twenty-four hours by massage. Is'nt this sufficient proof of its utility? We have stated that, as far as our own personal experiment went, it was in favor of treating sprains by massage. We have also seen what masters, who have studied joint diseases, think of it. We have never met with absolute reprobation. In France one hesitates and waits. Let massage be a therapeutic measure, but apply it cautiously, and do not expect too much from it. Especially do not let us show any sort of infatuation or enthusiasm. Massage ought not to be resorted to in complicated sprains, because this would be at the expense of the patient. This is what Bonnet, Malgaigne, Duplay and other authorities state in other words and with emphasis. In Germany, Volkman is not much

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(1) Mullier. Archives med. belges t, VIII, p. 22, 1875.

bolder. He, like the preceding authors, dreads the dishonesty and ignorance of the empirics. But when he himself massages sprains, he is quite satisfied with the success obtained. This admission is as valuable as a long plea in favor of massage.

What do facts attribute their success to? Those who did not hesitate to admit that they had borrowed a procedure from bone-setters would never have made this confession[1] had they not been able to support their boldness by statistics. If they had been unable to prove that by means of massage one effects a more rapid and permanent cure than by any other means, then they would have adduced two or three examples and commented on them. Opposition would soon have arisen, calling to them testis unus, testis nullus.

French statistics, the earliest ones, in order of date, are all favorable; foreign ones are not less so. The latter were compiled by specialists, doctors in hospitals and military surgeons, whose prime motive was to enable their men to perform duty as soon as possible. Statistics pure and simple, in which facts are recorded without any comment or definite object, are few. In France we have only those of M. Péan,[1] published after his "Lecons de Clinique Chirurgicale." "The Observations on Sprains," by Péan, number 61, and they are thus divided, according to their location:

| | |
|---|---|
| Wrist | 3 |
| Knee | 3 |
| Spine (region of the neck) | 2 |
| Tibio-tarsal articulation | 52 |
| Metatarso-phalangeal | 1 |

The treatment was in all these cases based on the same principle, immobilization. The patient had to stay in bed during the whole time he was in the hospital.

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(1) Leçons de clinique chirurgicale faites à l'hôpital Saint Louis, Paris, t. I,VII, 1876—1890.

When it seemed necessary, Péan placed the limb in a splint or gutter, applied compresses wrung out of hot water, and, later on, if the affection persisted, a plaster of Paris cast.

Let us omit the two cases of sprained spine, one of which was followed by loss of consciousness and epistaxis. The minimum duration of stay at the hospital was three days (only in one case), and the maximum 42. Altogether, however, 919 days of treatment were necessary for 58 patients. This averages a little more than a fortnight for each. In all these cases we have only had to do with typical sprains, without fractures or concomitant luxations. The patients came into the hospital immediately after the accident had occurred. Only once did it happen that the patient had suffered for four days. In the two most serious cases, which demanded 28 and 42 days, respectively, complete cure had even then not been established. After removal of the dressing one of the patients still had perimalleolar œdema; another one articular stiffness, which considerably impeded the movements of the joint.

The treatment by immobilization was rigorously adhered to as long as it seemed necessary; consequently the result is not as satisfactory, inasmuch as it took a fortnight to cure an ordinary, uncomplicated sprain, treated immediately after the occurrence of the accident. As an additional factor, we may mention that during all the time the cast remained on, the patients were obliged to walk on crutches.

In order to claim success, few simple, but indispensable precautions are necessary. We ought never to act blindly, but know what we have in view, and what we are doing. The more recent the effusion is the more easy is the absorption. Unluckily, this fact is admitted neither by physicians nor by laymen. One allows the exudate to become organized, and as a last resort massage is used to repair the prejudice caused by other treatment. The patient is suffering, the joint is tumefied, how could mechanical medication possibly be thought of? It is entirely out of consideration to think that massage, if properly performed, is the best anæsthesia that we have at

command. It is the quickest way of overcoming effusions in the jonts or in the teno-synovial sheaths and infiltrations of the cellular tissue. All cases are not cured in the same length of time. I have obtained excellent results after twenty-four hours; at other times it took me a fortnight, or more. I had to deal with identical affections, and no complications existed. This difference in time always depended upon the length of time intervening between the accident and the first séance.

Postponement may become dangerous. We see from the report of Bizet that some amputations performed on officers' legs, fifty years ago, were due to delayed treatment of sprains. We ought never, with scrofulous persons, allow a periarticular affection to become chronic. The initial phenomena disappear, the tumefaction diminishes, motion returns; but what is the result of all this? Very often a white swelling. The occurrence of periarticular tuberculosis, of limited foci of microbic osteitis, with fungus degeneration of the serous membrane, is admitted, but we are very apt to say that white swelling ought not to be mentioned. I do not make any claim in favor of traditional nomenclature, but I do know that the duration and progress of artropathies often depends upon the constitution of the individual, and that it is not wise to let a periarticular affection go too far.

Massage ought then to be applied in sprains. In the hands of empirics it has produced unexpected results. A lot of technical procedures and precise manœuvres have arisen. Every healer has his own rules, and only confidence in thos
But this confidence is absurd. We are face to face with v
ous predispositions and complex processes. No two cases
ever alike; how, then, can an unalterable method be emplo
in all cases? In case we have to deal with a recent spr
is not convenient to imitate the man of Thélus, or the
girl whom Bonnet has spoken of. Progressing inflamm
and exaggerated sensitiveness demand very slight frict
diminution in the inflammatory condition is followe

disappearance of the hyperæsthesia. One may exert a little more pressure as soon as the patient is feeling it less.

Massage cures absolutely. Neither blood nor serous fluid remains behind in the tissues, provided the divided parts are quickly brought together again. Experience has shown that the reunion of subcutaneous wounds takes place more rapidly than that of open ones. If immobilization alone is resorted to, something will always remain behind, and this would be sufficient to produce an acute attack in case of future accidents. One might call this a relapse, but it is not. It is a new affection in an organic territory, which has become the seat of less resistance, in consequence of anatomical changes which were not anticipated or prevented.

The indications are quite different in old cases. Here we have infiltrations and indurations. Effleurage or slight friction would be of no use; here powerful frictions are indicated. It is only by this means that cicatricial contractions can be cured. Passive movements are likewise indispensable, but it is patience that we need above all. It is sometimes only after several weeks' treatment that we are enabled to restore all the functions of a joint that was apparently immobile forever. I do not wish any one to have to treat a neglected sprain in a person suffering from rheumatism. Diathesis and traumatism are combined, muscular twitchings and subsultus tendinum for which we can find no cause are produced. Sometimes it is claimed that the sprain was improperly treated, at other times that the rheumatism accounts for the inflammation of the joint. All this may be true. The result, however, is an infirmity which seems to defy the best of treatment. This malady may, nevertheless, be overcome if we have full confidence in the efficacy of our method and if applied most energetically and perseveringly.

Walking, if possible, for a short time after the accident, does not cause the inconveniences that were formerly ascribed to it. It was feared that by doing so the congestion of tissues would be increased, the process would spread and be aggravated.

This possibility, however, is not so threatening as was entertained.

*Passive movements* should not be neglected. At first slight extension is made. Later on, when the inflammation has diminished, extension may be increased. It is a wise plan to postpone passive movements if one has reason to suspect that the ligaments are torn to a great extent, as was the case with some of my patients.

### OBSERVATION I.

*Acute Traumatic Arthritis of the Right Knee.—Cure After 12 Sittings. (6 Days.)*

M. G., 35 years old, fell from his horse in October, 1880. He had to be brought home in a carriage. I found him the following day with an ice-bag on his knee. Tumefaction and redness; the slightest contact and spontaneous movements provoked extreme pain. Performing massage for 3 days (effleurage), every sitting lasting twenty minutes, the pain and sensitiveness had almost entirely disappeared and the patient was able without too much difficulty to lean on his leg. Complete cure after 6 more sittings (two a day); the last ones in the form of friction.

### OBSERVATION II.

*Acute Traumatic Arthritis of the Elbow.—Radiating Into the Mass of the Epicondyle Muscles.—Immobilization of the Hand in Pronation. —Massage.—Cure.*

December 30, 1881, M. de Seh——, in jumping over a heap of sand, fell in such a way that his elbow struck the ground. Half an hour after the accident, he felt a slight pain over the area he struck. The following morning the pain had become aggravated and was attended by swelling. On my arrival the tumefaction was very marked. Posteriorly to and on each side of the olecranon process there was fluctuation. These points were more or less sensitive to touch. The muscular mass on the outer surface of the forearm was more voluminous than in the normal condition and very painful on pressure. The nearer I got to the articulation of the elbow, the greater was the sensitiveness and the more violent became the pain. The patient could not sleep because of this pain. The forearm was in a position midway between flexion and extension. Extension reached up to about 115°; flexion up to a right angle. Beyond this limit flexion became more painful. Active movements restrained. The hand was in pronation and movements of supination were impossible. After causing the greatest part of the œdema to disappear by means of massage, I found that the epicondyle muscles were not the seat of any lesion whatever. Massage, very painful at the beginning, was performed twice a day. The immediate effects were quite satisfactory, and the following night the patient was able to

sleep. A day after this the pain was less violent and the manipulations more easily tolerated. Slight passive movements.

January 2.—Passive movements possible, but extension less than normal. The tumefaction has considerably diminished and there is only a slight fluctuation in the neighborhood of the joint. No more sensitiveness in the muscles of the forearm.

3.—The patient can put on his coat himself.

4.—Passive movements of flexion and extension not painful and extension possible to the normal degree; the hand remains no longer immobilized in pronation.

5.—Only some weakness of the arm remains.

January 11, 1882.—I get a letter from the patient, who has left Paris, in which he says that the cure is complete and that he can now use his hand as well as before the accident.

When we have to deal with sprains of a large joint, the tibio-tarsal joint, for instance, it is wise to apply at the end of treatment a linen bandage in order to give more steadiness to the joint and prevent relapses. It has to be worn for some days.

Sprain is one of those affections which gives the clearest indication for massage. It may be used in all cases, whatever its seat may be, whether immediately after the accident or later on. It is the only means of preventing serious disturbances and of hastening the cure of those already existing. The method is essentially curative and wholesome. One might assume that the treatment of sprains occupies a prominent place in the statistics of masseurs. My experience, however, leads me to believe the contrary. In perusal of the notes I have taken since the commencement of my practice in Paris, I find 243 cases, embracing

16 .....tibio-tarsal sprains
45 .....fermoro-tibial sprains
11 sprains.....of the elbow
14 sprains.....of the radio-ulnar[1]
42 sprains.....of the wrist
7 sprains.....of the phalanges

(1) All these belong to an affection known as "lawn tennis elbow." It is produced by extreme pronation of the forearm with the arm in flexion.

This is not much during twenty years of experience and I am inclined to think most of my colleagues might remark the same. There exist here the same prejudices as in the country. An accident happens. The person injured has suffered neither a fracture nor luxation. Everybody congratulates him and is on the point of telling him to get up and walk on. If he does not do this at once they attribute it to a little indolence or faint-heartedness. The invalid, although he repeats that nothing is the matter with him, is surprised at his suffering so much, inasmuch as the bones and joints are all right. A friend or a neighbor comforts him and tells him the name of a practitioner who cures sprains and he is asked to come. The majority of simple sprains are treated in this way. When I ask patients, who come to me a week or two after the accident, or even still later, why they did not come before, I only obtain an evasive answer, and I conclude that an empiricist was consulted previously. He eases the pain a little, diminishes the congestion and swelling and enables the invalid to walk. If the case is an ordinary one, it is a brilliant success; if it is a more serious one it is quite another matter.

I am not in favor of immobilization, but neither do I believe in passive and particularly active movements too soon. It is better to advise two or three days rest, if it is possible. At the end of this time the patient will be able to take a few steps, but no long and fatiguing walks. If we have to deal with sprains in the lower extremity, a well-fitting roller bandage is necessary, otherwise the œdema will reappear in walking. Judgment must be used in massaging to prevent violent manœuvres. These are particularly injurious when the articular ligaments are torn or when fractures of the bones or lacerations of the periosteum exist.

When patients applied to me on the same day or a day after the accident, I nearly always succeeded in curing them after a treatment lasting from two to six days. When they came to me later it took a longer time and they were sometimes only definitely cured after several weeks.

The objection might be raised that the rapidity with which results terminated in using massage was only relative; that while some sprains were cured in a few séances, others required treatment extending sometimes over several weeks, and that we meet with the same conditions when treated by immobilization. No doubt a long time is sometimes necessary to attain the end, but no mention is made of the fact that these cases were exceptionally severe ones, and that they were exceptions to the general rule. Mr. Berghman, a writer whom we have frequently alluded to as one of the most staunch supporters of Mezger's method, records a case of a sprain in which fifty-two séances were required to obtain a cure. But it must be granted that he had to do with an exceedingluy serious and complicated case.

We have insisted very much on this part of our subject, perhaps too much and more than the importance generally attached to sprains seems to warrant; but do not let us forget that Baudens, Malgaigne, Volkmann, Hüter, Duplay, and others have all insisted on the inconveniences which neglected or improperly treated sprains can produce.

It is in relation to sprain that massage was first spoken of. The works of the first French observers, Mezger's thesis, the first memorials on this subject emanating from the school of Amsterdam, all treat of massage. One might have told us, and certainly with justice, if we had neglected it or treated it lightly that massage did not fulfill what it promised to be.

In most sprains it is the surest and simplest remedy. Even under unfavorable circumstances, when we see the patient a long time after the accident, when anatomical disorders or functional disturbances have set in, we may still with perseverance overcome them.

To sum up:

1st. At the initial stage, in the presence of classical phenomena, including pain, effleurage;

2d. When the patient does not suffer any longer; frictions

and passive movements; later on active ones; walking at the beginning ought not to be permitted;

3d. In all rather serious sprains, especially those of the legs, after every séance, application of a roller bandage.

II. *Luxations.*—When and where to massage.—Indications.—Luxations of the articular fibro-cartilages of the knee. —Luxation of the shoulder.

Ambroise Parè has recommended passive movements in order to facilitate the reduction of luxations, to favor the absorption of the serous effusion, and to put the fibres of the muscles and ligaments on a stretch. (1) The object of this practice was to remove the obstacles in reduction which might otherwise be encountered on the part of the muscles, to fatigue these and thus produce the disappearance of temporary contractions. The introduction of chloroform has rendered this procedure useless. The above object is more quickly and surely obtained by narcosis than by any other manœuvres. The ancients, also Ambrose Parè, Osures, édition Malgaigne, Paris, 1840, prescribed massage after the reduction in order to restore to the muscles their functions more promptly. Malgaigne was obliged to admit that passive movements should be resorted to quite early in order to prevent stiffness.[1]

Massage here is indicated for the same reason as in sprains. No matter how slight the luxation may be, it is always followed by bruising, tearing and by an immediate small sanguineous effusion and later on by arthritis.

In certain articulations, luxations are very often followed by fractures. These require most attention, and the first indication of proper treatment is not to harm the consolidation. Nothing prevents us from trying massage in spontaneous luxations resulting from old morbid processes or the ordinary luxations which are produced under the influence of even the slightest cause, as is often observed in the inferior maxilla, the worst that can happen is that it will yield no results. I am

(1) Malgaigne, Traité des fractures et luxations.

not going to devote a special chapter on luxation of the ankle, wrist, elbow or lower jaw. If they are not accompanied by any complications in the osseous system, massage might be employed before inflammation has set in in order to simplify the reduction, and after this in order to prevent concomitant disorders. The general rules which I have given find their application here. All that diminishes pain or tumefaction may be of diagnostic value. It will often be easy to find out after effleurage, whether we have to deal with a real luxation, sprain or justa-articular fracture.

Reduction having been accomplished, manipulations are useful in aiding the absorption of intra or extra-articular extravasations in preventing synovitis, in facilitating the reunion of divided parts, in avoiding persistent œdematous infiltration and later on in overcoming one of the most frequent occurrences, relaxation of the capsule or of the ligaments which predispose to the production of luxations. The accidents which I am speaking of are at times of such severity, especially in the shoulder, that several months elapse before the patient can only with difficulty, or perhaps not at all, use his arm. This affection is particularly troublesome in elderly persons who are more than others exposed to atrophy of the deltoid. This can be prevented by massage, but we ought to use every precaution. Effleurage cannot do any harm, and passive movements are useful. The latter ought, however, never to be commenced early, otherwise one might incur the risk of exaggerating the rupture or impeding its cure. I only have recourse to them after two or three weeks, and I always wait another week or even more before allowing the invalids to use their joints.

*Peculiarities relating to the knee. Luxation of articular fibro-cartilages.*

There is a great difference of opinion among writers on this luxation. Emil Kleen and Johnson hold that the internal meniscus is the more often luxated and forced into the interior

of the joint. Erichsen[1] and Berghman have also spoken of luxation of the external fibro-cartilages. According to them it may be pushed forward and be caught above the tuberosity of the tibia, where it is possible to discover it by palpitation under the teguments inside of the external condyle of the former. W. Scott Lang has divided luxations of the fibro-cartilages of the knee into complete and incomplete luxations of the internal and external meniscus. The most common are the incomplete ones of the internal fibro-cartilage. They are produced during flexion and outward rotation, because at that moment it is no longer compressed between the tibia and femur. The reduction is made by rotation of the leg inward and by flexion. The external meniscus is luxated in consequence of rotation and and flexion; in order to reduce it, the leg must be flexed on the thigh, rotated inwards and when in this position extended. This operation is often so difficult that it cannot be undertaken without chloroform anæsthesia[2].

The diagnosis is easy. The leg is nearly immobilized in half flexion on the thigh. A constant pain exists, produced by tension of the crossed ligaments and by pressure of the lateral ones. The position of the patient reminds one of what is observed in cases of floating body in a joint.

The luxation is followed by an effusion into the synovial membrane. On inspection and palpation of the joint one often finds very distinct changes in its contour corresponding to the sides of the joint and the lateral borders of the patellar tendon. If the meniscus is luxated forwards, there exists a depression of the capsule; if on the other hand it is luxated backwards, the capsula is prominent. These phenomena I observed in some patients who came under my care.

The indications we have to meet in reducing shoulder dislocations are the same as those in sprains. We have already spoken of the physiological indications. As to other disturbances we shall presently come back to them.

(1) Erichsen. System of Surgery. London.

(2) Internal derangement of the knee-joint. Edinburgh Med. Journ.

§ 2.—*Massage in inflammatory affections of the articulations.*

We know that primary phlegmasia of the joints exist, but how do they originate? Primary arthritis, produced by traumatism or any other cause is in reality a synovitis. Very often the process is limited to the serous covering. Hueter and his pupils scarcely ever speak of arthritis. Volkmann had almost the same conception of the disease. He admitted that the fibrous capsule is a prolongation of the periosteum, the inside of which is covered by synovial membrane. The latter is a serous membrane of a peculiar kind. This accounts for the success of massage. What advantage would we gain in osteitis by means of massage. In order to obtain the desired results, to create artificial vacuas, to produce depletions and to act on the nutritive movements, it is necessary for massage to deal with soft tissues and not with hard surfaces. Nobody can imagine that even the most energetic stirring up of the osseous cylinders could modify the blood current in the Haversian canals and stimulate osmosis in the osteoblasts. If we have obtained such satisfactory and rapid results in sprain, it is because we have hastened the absorption of the effused liquid. Traumatism of a joint or its neighborhood does not necessarily produce stretching or laceration. The fibrous capsule and muscular tendons may remain intact. Hueter affirms this and gives an explanation. The tissues present remarkable differences in their elasticity. The synovial membrane is endowed with less than the skin. An external violence forces it against the osseous surfaces which are hard. Let us suppose that somebody going up stairs knocks his knee against the sharp edge of the stairs. Perhaps receives neither wound nor ecchymosis. The epidermis and the vessels of the derma have resisted, but there is nothing to tell us that those of the synovial membrane have done the same; there is no evidence that a rupture followed by sanguineous effusion may not have taken place into the joint. Haemostasis is not so easy as in the surrounding connective tissue. Blood may flow for a long

time through the artificial orifice produced by the laceration before a coagulum has formed to stop it. Haemarthroses are not at all rare after contusions. The blood acts as an irritant, it produces an increase and persistent disturbance in the secretion. Absorption is slow and poor. Forty-eight hours after the accident the articulation is filled with a mixture of coagulum and serous fluid.

"Serous synovitis is most often produced by articular contusion and by effusion of blood into the synovial cavity[1]."

We have seen the same thing happening after sprains and in accord with Phélippeaux have derived an indication relating to the use of massage. Let us use massage in order to split up the sanguineous mass and in order to favor the absorption; in the case before us the indications are the same.

It is not easy to explain why frictions should be used only in sprains; why nobody, until lately, has thought of extending them to acute inflammations of the synovial membranes, which, as Hueter observes, are almost always of traumatic origin. In France as well as in Germany, the absolute necessity of immobilization was formerly admitted in acute articular inflammations. "It is especially by immobilizing and by covering the affected limb with cold applications that the inflammation is successfully stopped," says M. Duplay.

According to Volkmann, we should above all in treating acute arthritis, fix the diseased joint and place the limb in a proper position. Hueter devotes a whole chapter to show the utility of this practice. "Rest is the prime and essential condition of an antiphlogistic treatment in organs submitted to constant movement, says he."

Accordingly immobilization was resorted to in established inflammations in order to prevent the purulent transformation of the exudate. In contusions and luxations, rest and fixation were indispensable, prophylactic means. Surgeons convinced that this method was not in the least harmful, were such great

(1) Hueter, Klinik der Glenkkrankheiten, p. 103.

enthusiasts for immobilization that many joints remained immobilized for a long time. This was, however, an unexpected result. Malgaigne, who distrusted anything new and who feared all active intervention was obliged to acknowledge the danger of too long a rest.

When we speak of movements it always means to counteract existing disorders, whose disappearance we are trying to cause. Those who think of preventing them do not for an instant suppose that it would be advantageous to begin at the very outset of the acute period.

In December, 1879, a very interesting discussion took place at the Surgical Society in Paris, on the therapeutics of joint diseases. Professor Leon Le Fort laid down the principle that one ought never to think of movements as long as inflammatory products existed.

M. Armand Després, based on Boyer's authority, added compression to the fixation; but he no more than his colleague permitted movements as long as pain existed.

In an essay on massage, read a few years before in the Society of Medicine in Helsingfors, Professor Estlander also declared that friction is not indicated during the inflammatory period of atrthropathies[1].

In view of such established ideas, a certain amount of courage was needed to assume the attitude of a reformer; to manipulate a knee when the inflammatory products were in full activity, to prescribe walking to people who could scarcely do so, when physicians looked upon this practice as dangerous and expected from it irreparable damage. Mezger possessed this courage, and if he had done no more, he would nevertheless be considered as the one who initiated scientific massage. We should, therefore, grant him the highest rank among those who have defended and popularized this method of treatment. His conviction must have been firm. Facts must have been

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(1) Estlander. Det therapeutiska värdet af gnidningar, sådana de användas vär folkmedecin. Finska Läkaresällsk. Handl. 1872, N. 23.

very demonstrative, because his pupils have reproduced his doctrine without any alterations or any of those diplomatic attenuations which are often resorted to in order to secure the adoption of an unusual and bold idea.

Mr. Berghman has not been satisfied with the summary mention contained in the account he published with the assistance of Helleday. His personal statistics are preceded by a statement setting forth probably the most exact and complete representation of Mezger's doctrine, then known.

Numerous dangers, says he, threaten the wounded articulations. All is not over when the acute inflammations no longer exist. What weapons have we to combat those dangers? None whatever. Cold compresses, ice, local blood letting derivatives and revulsives are used, and when all these are of no use, one has recourse to the last means: immobilization. Without it there is no cure, and by the aid of it we do not succeed in restoring to the limb its function. It almost certainly leads to deformity when a joint of some importance is affected by arthritis. It is not a decisive, but rather an indefinite remedy which we flock to as a last resort. Mezger proved that there did exist another remedy, and that in doing the reverse of what was admitted, one succeeded in curing. His pupils were surprised at seeing him massage joints attacked by acute inflammations, then return to passive movements and allow the passive patients to attend to their work[1].

Thus we see that massage is a powerful antiphilogistic remedy. It causes the venous stagnation to disappear, it stimulates the absorption of that agent which is productive of the phlegmasia, and thereby re-establishes the normal state of affairs. All is but a question of time. Whereas surgeons tried to prevent the bed sheets from coming into contact with a joint, on account of fear of pain or still more serious consequences, we perform effleurage, use extensive and systematic

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(1) Berghman. Om de acuta traumatiska ledgängsskadornas behandling med massage. Nord. Med. Ark. Band., VII., No. 13, p. 34.

flexion. When they prescribe absolute rest, we allow our patients to walk.

Acute processes, instead of being an obstacle, become an indication for us. At this stage the problem admits of an easy statement. For immobilization has not the advantages claimed for it, and it is neither necessary nor useful. If, on the other hand, it does possess advantages with the opposite method, the failures ought to surpass the success.

Besides uncertain cures one ought to find striking failures. Suppurative arthritis in consequence of slight traumatisms rendering amputation necessary; statistics comparable to those of Baudens. Most of the pupils of the school of Amsterdam were not convinced that these failures could not happen. It is very probable that at least some of them in the presence of obvious failures would have put the public on its guard. But such is not the case. Witt trembled when he saw Mezger's boldness, and he does not hesitate to say to his colleagues: "Do the same as he does." It is a peremptory argument.

§ 3.—*Massage in inflammatory diseases of the articulations.—Acute arthritis.—The acute inflammation of the joints may be of spontaneous or traumatic origin.*

*Spontaneous Arthritis.*—It does not develop without a predisposing cause: a general constiutional or accidental organic cause is necessary in order to produce it. In virtue of this, it might be placed among the diathetic affections. Traumatic phlegmasies may properly be classed next to sprains and luxations.

Inflammatory affections present certain peculiarities. Besides idiopathic arthritis, evidently a diathesic disease which may be of rheumatic, gouty or blennorrhagic origin, there are other affections less frequent, it is true, in which the general cause is less apparent as patients exhibiting at no time rheumatic manifestations nor any intercurrent infectious disease. The same remarks apply to traumatic arthritis.

*Traumatic Arthritis.*—As a result of the injury a more or less extensive synovitis has been produced, although the peri-

articular tissues may remain normal and the osseous surfaces preserve their relation.

Massage, although indicated in most of these affections, is not so in all; it is far from always yielding the same results.

Spontaneous or traumatic acute arthritis may be attended by 1st serous effusion or serous effusion tinged with blood; 2d a fibrinous exudate having at the outset a tendency to form more or less firm adhesions about the articular surfaces and false anchylosis; 3d suppuration in the joint. Massage is indicated in the first two cases, but distinctly contraindicated in the third. It is also contraindicated in gouty effusion during the acute period.

Massage yields rapid and positive results. After the first séance already the pain and tumefaction are diminished, and the absorption is started. Some cases do not even seem appropriate to the treatment. A patient gets a sprain followed by inflammation in the articular synovial membrane. He is treated by derivatives or blood letting while the limb is maintained in strict immobilization. This treatment is sometimes successful. After a month or more the patient is able to walk. But does this mean that the vague thought of a former traumatism remains behind, that there is restitutio ad integrum? By no means. This articulation has become the seat of less resistance. If a joint of the leg is affected, and the person is compelled to assume the erect position for a long time or has to walk a number of miles, effusion and œdema will be the consequence. Now you begin the same treatment and again with success, but you will never be able to prevent relapses.

This pathological susceptibility once developed in consequence of the accident does not seem to be in accord with the idea of establishing a perfect cure. Probably lesions remain which are often imperceptible to the physician and insensible to the patient, and which are compatible with the function of the joint. It is a general pathological law that the longer a disease lasts, the more it alters the affected limb. Massage

as we have already seen cures sooner than any other method; consequently there is less chance for persistent organic changes and relapses. Even in tardy manifestations it gives excellent results. Does massage render the joint less susceptible to relapses? Is it better than the old procedures? We are tempted to answer this question affrmatively, knowing that with massage it is possible to prevent the occurrence of untoward symptoms by intervening early.

Berghman has collected a number of cases which he had to treat. They were all of an acute variety, that is to say the injury had been received at the most a week before he began to massage. In all except five he had one sitting a day. Altogether there are 145 cases, including sprains, arthritis with effusion of blood and serous fluid. They are divided in the following way:

| | |
|---|---|
| Tibio-tarsal articulation | 70 |
| Various articulations of the tarsus | 10 |
| Articulations of the hand | 10 |
| Articulations of the fingers and toes | 6 |
| Articulations of the knee | 41 |
| Articulations of the elbow | 5 |
| Acromio-clavicular articulation | 2 |
| Scapulo-humeral articulation | 3 |

The patients' age varied between 6 months and 70 years. In all the cases complete and permanent cure was obtained. As a rule the best results were achieved when early treatment, soon after receipt of injury, was instituted.

In cases where not more than 4 days had elapsed after the traumation, the number of sittings needed for recovery were 12,44 on an average.

*Chronic Arthritis.*—All sluggish joint affections might be called chronic arthritis. Serous effusions, which are termed hydarthrosis in France and articular hydropsis in Germany, all originate from chronic inflammatory processes. The same remark applies to rheumatic, scrofulous or gouty arthropathies and to tubercular joint affections.

It seems advantageous to me, taking into consideration

the particular standpoint I take, to distinguish these affections one from the other.

Massage cures a certain number of cases of arthritis, whereas it scarcely ameliorates others. In some cases it is decidedly contraindicated, because its influence or the local condition is problematical. And it is by no means certain that it does not form a factor in contributing to serious general disturbances. I am referring to tubercular affections of the joints which I am about to discuss.

Let us for the prsent assume that we have to deal with a patient who was not affected recently by any acute disease; who is neither tubercular, scrofulous nor rheumatic, or at least one who has not presented any apparent rheumatic manifestations; a patient in whom we do not suspect any microbic infection in the synovial membrane or in the peri-articular tissues. This patient is by no means beyond the reach of chronic arthritis. These chronic affections may be produced after sudden acute attacks or else they may progress from the beginning very slowly and insidiously; they may remain fibrinous and produce adhesions or even intra-articular vegetations.

These facts are revealed to us by microscopical examinations of the affected joints and cannot be verified during life. They are derived by a process of induction and analogy. Direct observation proves that chronic arthritis may exist from the start without effusion, but there are cases—and they are the most frequent—in which the cavity of the synovial membrane is more or less filled with a serous fluid. These are the classical hydrarthroses.

Chronic arthritis is of most frequent occurrence and more easy to treat in the knee than in most other joints. The articulation is voluminous and easy to get at. Energetic and thorough massage presents no difficulties.

OBSERVATION III.

*Hydarthrosis of Both Knees.—Massage.—Cure.*

Mrs. L., 34 years old, has at different times had effusions in the knees; both knees have never been affected at the same time. The left knee joint seems to have been more often affected than the right

one. Walking has become more and more painful; she is even often obliged to stop during her walks. Since last year she can only with difficulty get up and down stairs. All medications, employed in similar cases, have been used without any success; such as leeches on the knee; cold compresses, hydrotherapy; stay at Biarritz, Luçon, Aix-les-Bains; immobilization of the knee by means of a plaster of Paris cast. The patient kept this on for two months without any advantage.

When it was taken off, the atrophy of the muscles of the leg had increased and her general condition had rather deteriorated than improved.

Swelling of both knees, less marked on the right side. Moderate fluctuation on a level with those parts of the synovial membrane, which are above the patella (cul-de-sal of quadriceps). The integument of the knee, very much thickened, is of a dark color and traversed by large dilated veins; passive movements are very much impaired. After a little more than two months of treatment by massage, the knee has regained his former shape. There is no more intra-articular or perisynovial infiltration, almost no trace of the former atrophy. Walking is not painful; the patient only feels tired after a rather long walk. Six weeks after this she was able to take long walks.

The coxo-femoral articulation is less exposed to traumatic inflammations on account of the protection afforded to it by its peculiar locality. It is less exposed to external violence, but also more difficult to massage. It can hardly be treated except in children and thin persons.

We ought to remember, when dealing with an ilio-lumbar affection that we can sometimes have a sacro-iliac arthritis. They cause difficulty on walking and a feeling of heaviness in that region. Pain on pressure in the joint is pathognomonic. As this articulation is deep and surrounded by a thick muscular layer, the pressure in massaging must be firm. I have seen this arthritis mistaken for sciatica and particularly for myositis of the gluteus medius and the lower part of quadratus lumborum.

There are cases of chronic arthritis where the effusion is not confined to any single joint, but for the most part to several. These joint affections are accompanied by inflammations of the neighboring muscular system or even the viscera, and it is rational to conclude that they are often but local manifestations of a systemic disease. Under this title we shall study them later on.

Of the different varieties which I have indicated arthritis with serous or sero-fibrinous effusion is best adapted for massage. The method is contra-indicated if there is any suppuration. We shall not speak of this variety.

There are very few chronic arthropathies in which massage is not indicated. It sometimes happens that an obscure affection of the legs originates from a circumscribed lesion of the joint, which careful examination might reveal.

I have had to treat many cases of this kind. This application to which I have given the name of "Circumscribed Arthritis" is, as far as I know, almost unknown up to the present time. I never have met with it in any other joint except the knee. It is very rarely bilateral or symmetrical. The seat of lesion is generally found near the lateral margins of the patella, less often beneath it. When these spots are palpated with slightly increased pressure, the patient will often cry out with pain. There is, however, no effusion and hardly any thickening of the capula. The contrast between the objective and subjective symptoms is very striking. The former are almost insignificant; the latter are serious enough to cause difficulty in walking or to render it even impossible. Some people are obliged to stay in bed, and in this case diagnosis is of course always uncertain. Quite often other diseases, such as rheumatism, affections of the central or peripheral nervous system, etc., are held accountable, and the treatment employed is in conformity with these suppositions, without yielding, as might be expected, any results. I am convinced that several conditions described under the name of neuralgias or articular neuroses, are but cases of circumscribed chronic arthritis similar to the case mentioned above. They are excellent cases to treat for the practitioner who knows how to recognize them. When well done, energetic massage is a sure means of bringing about a cure; it removes pain, functional weakness and atrophy. The patient is all the more surprised at this result, inasmuch as the diagnosis was rather uncertain and the prognosis given rather guarded. In chronic arthritis attended

from the beginning by serous effusion, massage is easier and there does not exist any contra-indication.

Pusillanimous, timid practitioners hesitate often in those cases of which I have spoken. When the slightest acute phenomenon exists, they are afraid of causing an exacerbation, and when all is over, they are still afraid of causing a relapse.

Passive distension of the capsule, which has lost a great deal of its elasticity, is sometimes produced if the effusion lasts a long time. The former does not always retract as the liquid contained in the articular cavity is disappearing. It remains soft and flabby and the joint has lost its firmness. As a consequence of this trouble I have observed in the knee the anomaly called *genou de polichinelle*. An attempt at walking results in mobility of the joint in every direction, and inability to stand on it. In order to enable the patient to walk, it becomes absolutely necessary to steady the joint artificially by means of a rather solid bandage. It is especially in persons reduced by diseases or age that these accidents are met with. Massage increases the vitality and activity of the tissues. It is also necessary to extend its action to the muscles in the neighborhood. These are more or less atrophied.

Everything that increases their energy enables them to contribute to the tension of the capsula.

### OBSERVATION IV.

*Chronic Arthritis of the Knee.—Relaxatian of the Articular Ligaments.—Walking Almost Impossible.—Massage.—Rapid Cure.*

M. D., 70 years old, robust and in good, general health; well preserved. For some time experiences difficulty in walking, especially in going down stairs. His right leg is very unsteady and tosses about in all directions. After walking a few steps with the aid of a stick, he is obliged to rest. Marked limping. These accidents date back as far as November, 1889. At that time the patient noticed swelling of the right knee without any known cause; no pain or almost no general symptoms. Hot baths, tincture of iodine, absolute rest. During the next fortnight the tumefaction diminishes somewhat, then it remains stationary. Splint applied. He is advised to take short walks. The apparatus is removed at the end of 3 weeks. When I called on him, April 5th, 1890, I found an enormous knee. There is no effusion into the joint, but the capsule is flabby and considerably relaxed. Fluctua-

tion almost not perceptible. Infiltration of the sub-patellar region. Exaggerated movements of the knee-pan in all directions and particularly in the lateral direction. The movements of the leg transgress the physiological limits, especially in the lateral direction. Very little sensitiveness to touch. Contrary to what generally happens in old people, there is not much atrophy of the muscles of the thigh. I attribute this circumstance to the fact that the patient was made to walk directly after the application of the apparatus so that the immobilization was only relative. Energetic massage of the knee quite easily tolerated. After a few sittings the patient is already able to walk better. The cure is even more rapid than might have been expected from the patient's age. After six weeks all traces of the effusion and the periarticular infiltration have disappeared. The articular cavity has regained its normal capacity. The movements of the patella are within the physiological limits. The patient can take long walks, even without the aid of his stick. No sign of atrophy of the muscles.

I have quite recently had the opportunity of treating an eight year old boy, in whom relaxation of the tibio-tarsal ligaments had been produced in consequence of a fracture of the lower extremity of the tibia (a fracture which probably involved the articular surface). When this child walked for some time, œdema about the joint was constantly the result. The act of walking was painful and he continually twisted his foot. His physician was quite opposed to massage and declared that the only result would be to cause a still greater slackening of the ligaments. After treatment, extending over six weeks, I had the good fortune of seeing the function of the joint restored and the boy could now walk as well as before. In cases of rather old relaxations of joints, I have also obtained good results.

People who have been cured of a chronic arthritis are not always able to use their limbs at once. The articulation into which the effusion took place, if there was any at all, frequently remains painful, although nothing abnormal, neither in its shape nor in its consistency, can be detected. The cause of this is that not enough attention has been paid to the atrophy of the neighboring muscles. It has been supposed, and apparently with a certain amount of truth, that this affection was only capable of producing fatigue and weakness in this limb,

but that it could never be the cause of any pain; this is a mistake.

In the cases I had to deal with, I have always massaged the atrophied muscles. Recovery was complete, and I have never had any persisting pain. If patients, who at the beginning had been treated by others, came to me complaining of this trouble, I always initiated treatment by first acting on the muscles. And after these had returned to their normal state, everything else disappeared. It is easy to explain the cause of these pains. According to Hueter the osseous protuberance, the capsules and the ligaments as well as the muscles contribute to maintain the articular surfaces in their physiological relations. If one of these forces happens to be suppressed or notably diminished, the articulation will become affected on the slightest movement. When atrophy of the muscles takes place, the articular surfaces tend to separate and the ligaments are put on a stretch so that the joint becomes sensitive to pressure. The pains starting at one point of the periphery radiate in all directions. These facts have to be pointed out as I have had to treat patients for this very trouble. The patients complaining of pains in the region of the knee have all undergone a long and useless treatment, as though they had been afflicted with a chronic organic disease of this joint.

So far we have only spoken of hydrarthrosis as developed under the influence of primary inflammatory irritation, however slight that might have been. True dropsy may, however, be produced by slow and continuous and almost painless effusion of serous fluid into the articular cavity. I had the opportunity to treat some cases of spontaneous hydrarthrosis of the knee of the above variety. The effusion had been produced within twelve to twenty-four hours, and the swelling had attained its maximum intensity in the same length of time. Everything disappeared spontaneously after a week or fortnight. But recurrence soon took place. The attacks sometimes presented a relatively regular periodicity; in two cases both

knees were affected alternately; massage did not yield any better results than other medications, especially the sulphate of quinine. In ordinary hydrarthrosis I have succeeded in causing a disappearance of the liquid and nearly always in preventing its reproduction, probably by modifying the secreting surface. I am inclined to believe that in the cases we are speaking of we have to deal with vaso-motor disturbance. Chronic arthritis of this kind may be produced in all joints. It is, however, most often observed in the legs and especially in the knees.

§ 4.—*Massage in diathetic and secondary affections of the joints.*

Several articular affections which we have already studied and several of those relating to the muscular or nervous system which we shall study later on, are produced at the same time as other affections of recent or remote date. These latter progress parallel to the above, or else they succeed them, or else alternate with them and in such a manner that it is hard to believe that they are manifestations independent of one another.

*Rheumatic and gouty arthritis.*

A patient, under the influence of a traumatism, a cold or any irritation or without any apparent cause gets up a phlegmasia in the femoro-tibial articulation. He is examined, his previous history is carefully investigated, and nothing is found. There is sufficient reason for supposing that the affection is idiopathic and accidental. If, on the other hand, during the examination facts are revealed which might lead us to suspect rheumatism, gout or scrofula; if the patient suffers from imperfectly cured gonorrhœa, then the conditions are not longer the same. If even the most careful analysis of the symptoms shows but deformity and local subjective phenomena, a constitutional element exists which must not be neglected. Articular phlegmasia was in the first case the primary affection; it served as an indication for the therapeutic measures to be taken.

In diathetic or secondary arthritis, indication for treatment is less clear. A general complex state of affairs exists which is but vaguely understood. It is this uncertain, misty predisposition we have to combat. As long as it impedes the regular cycle of organic transformations nothing will be accomplished. Massage effects a disappearance of the effusion in the knee and elbow, it restores the integrity of the joint and the functions of the limb, but for how long? Can a definite or even temporary result be obtained? Can we possibly do any harm? On the answer of these questions do the indications of massage depend. It is useful in accidental atrophies. This we have demonstrated and we shall also show that it is beneficial in myopathies.

Observation alone will teach us whether rheumatism, gout, scrofula, tuberculosis or gonorrhœa will not reverse the terms of the problem and render the expected reaction impossible.

Rheumatism affects the joints. The idea of diathesis has always been associated in the minds of nosologists with one of these organs, and so persistently that they attempted to extend it by synthesis and thus create arthritis, a general and more comprehensive disease than rheumatism. We shall devote no time to the study of the acute form; nobody would think of using massage in that. The chronic forms, however, demand our attention[1].

We might say, generally speaking, that arthritis of chronic rheumatic origin, whatever its form might be, almost never stands isolated.

It is indispensable to take into consideration, on examination of a joint, the state and condition of the opposite joint. Without this mode of comparison, many changes in form and outline would be imperceptible and pass unnoticed. By this means alone are we able to appreciate definitely the variations of the effusion. The entire region, all the joints and

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(1) Only when the acute or subacute effusion shows no tendency to become absorbed we may try to massage. In the beginning we proceed with a great deal of gentleness and feel our way as it were.

neighboring serous bursae ought to be examined, otherwise one is liable while performing massage to discover unsuspected lesions.

Arthritis of the large joints require too much attention. Very often less important articulations are affected, and their lesions are followed by phenomena difficult to explain. I have seen among other the peroneo-tibial and acromio-clavicular articulations affected in cases where nothing would lead us to suspect it[1].

These cases are not isolated; there often exist cases of arthritis attended with effusion into the knee, shoulder or even the neighboring synovial bursae. The same remark may be applied to the phalangeal articulations of the hands and feet; to the metacarpal and metatarsal articulations of the fingers and toes. It would be erroneous to suppose that these affections are easily cured. On the contrary, they are often very obstinate. The diagnosis is sometimes difficult, and these cases of arthritis attract only attention when the symptoms are rather pronounced. In order to excite pain it is sometimes necessary to exercise very firm pressure. Before beginning to work on the effusion, one ought to examine too most carefully the neighboring muscles and tendons whose sheaths pass near the joint. If the muscles are affected or atrophied, they must be massaged most energetically and perseverently; otherwise all the benefit derived from treatment of the joint is of no value. Massage is only useful in articular rheumatism where the joint presents definite symptoms; it is useless in vague or erratic pains. Even in the former case permanent cure is often uncertain. We have seen, when rheumatism seemed stationary, an acute attack setting in nevertheless. When several joints are

(1) These two joints in my opinion deserve special mention. Almost always the effusions in them are of rheumatic origin. They are very painful owing, as I believe to the deficient development of the capsule. The extremities of the respective bones are in immediate position as it were. Thanks to this latter circumstance massage is painful too and far from being easy to perform.

affected, the séances are fatiguing to the physician. The patients suffer and complain, and nothing is accomplished for a long time. It is often necessary in these cases to give two séances a day. We must never forget that rheumatism is a general disease and that the effects of massage are purely local. It is then desirable to supplement massage by thermal baths as at Aix-les-Bains or other less powerful ones as at Wildbad, Ischl or Ragaz.

### OBSERVATION V.

*Rheumatic Multiple Arthritis of the Lower Limb.—Various Treatments Used Without Success.—Massage Cures the Local Affections; Amelioration of the General State.*

H. N., 34, native of the United States of America. Gives a history of rheumatism in his family. Multiple attacks of acute articular rheumatism have affected several joints. Three years ago both knees were swollen and became painful one after the other. Salicylate of soda stay in bed. After this the patient was allowed to get up and walk about. Since that period from time to time pain in his knees, radiating into the neighborhood, especially into the posterior surface of the leg. He suffers especially at the approach of change in the weather and when it is cold and damp; more in the night than in the day. Vinum colchici, externally, frictions with various medicamental ointments without result. Application of cautery was only followed by transitory amelioration. I saw this patient for the first time at the end of autumn in 1886. After a rather long walk, his legs give away under him; experiences troublesome sensations rather than real pain on the right side. The large joints of the lower extremity on both sides are swollen. They contain some fluid. Tumefaction on a level with the upper peroneo-tibial articulation, with the small bursa situated under the lower insertion of the semimembranosus muscle, the popliteal region on the right side. Slight fluctuation in the knee; periarticular œdematous swelling, especially marked in the region below the patella. The capsule is flabby and the lateral movements of the patella are somewhat exaggerated.

Atrophy of the muscles of the thigh. This condition is especially marked on the right side; the patient suffers most on this side. Pain on pressure in the knee, particularly over the upper peroneo-tibial articulation. All the diseased parts having to be treated at the same time, every sitting lasts more than half an hour. After a month of treatment I find for the first time some slight, but evident amelioration. I only stopped massage after two months and a half. At that time he was able to take long walks without getting tired. The leg has regained its strength. The patient is delighted at the result obtained. No trace of the effusion; the atrophy has almost entirely disappeared. I saw this patient again in October, 1889. The local condition was as satisfactory then as at the end of the treatment, and

his general state of health was much improved.. This latter after a cure at Gastein last summer. In December of the same year fresh rheumatoid attacks threaten. Everything is easily overcome after some sittings by massage (3 weeks) and hot baths. I received word from this patient in August, 1890, that the cure was lasting and that his general state of health was excellent.

The application of massage in the course of a rheumatic affection is often interrupted by the occurrence of relapses of varying intensity. Sometimes the joints are swollen and become a little sensitive to pressure; that is all. It is useless to interrupt the treatment. But if one has to deal with real acute or subacute attacks, massage ought to be stopped. Sometimes the crisis seems to produce a favorable modification in the way in which the joints react. Amelioration in the symptoms is more quickly obtained now than before.

*Gout.*—In gout I only use massage when the attack has subsided or when arthritis or teno-synovitis (resp. bursitis) with effusion remains. In the toes I have sometimes succeeded in causing the disappearance of tophi when the latter were neither hard nor old.

Very often and in comparatively fresh cases gout does not provoke what I might call a frank attack. It is in uniformity with my long experience to rather abstain here from any motion by means of massage. Any manipulation, sometimes even a very gentle one, is liable to stir up the disease anew and nothing is gained in the end after all. Only in those cases, where after thorough examination you find that the affection is complicated with rheumatism and that the rheumatic principle is the prevailing one, not a very rare occurrence, are you allowed to use massage. Great benefit is often derived in such cases.

With some people it is difficult to tell whether we have to deal with rheumatism or gout, because the symptoms are so indefinite. It is better in these cases to assume that we have to do with gouty diathesis and act accordingly[1].

(1) Sometimes I have used massage with a diagnostic view in order to find out whether I had to deal with gout or rheumatism.

Next to articular phlegmasies, which may be connected with rheumatism and gout, I have placed *arthritis deformans.*

Are the cases of this class connected with the conditions indicated? This cannot be answered affirmatively. Their course is essentially chronic; massage is of no use in these except in so far as it diminishes the muscular atrophy, which the disease is attended by. Sometimes, too, massage may be applied in the accompanying effusion of the joints, the disease in question not being always—contrary to what is generally maintained—of a dry nature.

The manipulations employed in chronic arthritis are generally effleurage and friction. Tapotement is only indicated when the arthritis assumes a torpid character and when it is necessary to provoke reaction and revive the vitality of the tissues. Mr. Kleen advises thorough friction from the very beginning on that part of the joint which is nearest the centre; in this part the absorption of the divided products is said to be quicker and easier than in others. In order to alleviate the irritation consequent upon frictions, one ought to wind up with effleurement. It is also aided by passive movements.

*Hyperplastic Granular Synovitis.*—There exists among pathologists a manifest tendency to assign scrofula to those indeterminate and convenient affections which one appeals to when there remains no other cause for explaining the evolution of a disease. Most phenomena which were formerly thought to be connected with scrofula are due to local tuberculosis. . A great many of the invading and sluggish lesions are of bacterial origin. But I do not believe that we are justified in regarding all proliferous chronic inflammations of the joints as of tubercular origin.

In view of the difficulty of the differential diagnosis between the two different affections I think that non-interference on the part of massage would be the best procedure to adopt here; it could be of no use to favor the absorption of a product containing a specific element, as the latter exhibits only too much tendency to invade the organism.

*Gonorrhœic Arthritis.*—This class of arthritis has until lately not been studied much as regards the influence of massage. We entertain slight hopes of success by the aid of massage in this affection on account of its bacillar origin, its frequent acute character and its great variety, as long as the discharge exists. It is better policy to advise the patient to come back later on, when the cure of the urethral discharge is complete. We then do not need to fear any further invasion of the gnococcus. In proceeding in this way I have often had quite excellent results.

§ 5.—*Massage in Articular Stiffness (False Anchylosis).*

In the year 1887 I published a monograph on this subject[1] in which I attempted to show the different views that were entertained during late years as regards false anchylosis, how the indications for treatment, which were applicable, had been met. I gave the history of the not-bloody methods of rectification. I have utilized them for the purpose of introduction to describe that one employed by myself. I cannot reproduce here all that I have said. Those who are interested in this question have only to read this treatise. I shall extract from it only that which concerns the operative procedure applicable to the different articulations[2].

Stiffness of the joint may be caused in three ways: 1. Traumatism; 2. Rheumatism (gout); 3. Chronic phlegmasia, very often grafted upon the general state of disease called scrofula.

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(1) Norström. Traitement des raideurs articulaires au moyen de la rectification forcée et du massage, Paris, 1887.

(2) This method to overcome the rigidity of limbs by manual force is by no means new. It has been practised for a very long time. But in the manner in which it was performed, the results have not generally been very satisfactory. As soon as too strong a reaction sets in they got frightened and stopped treatment altogether or temporarily with the intention to resume it as soon as the produced irritation had subsided. The patient was obliged to keep to bed for a longer or shorter period of time, antiphlogistics were applied and when the proper moment had arrived to commence treatment anew, one was surprised to find that all that had been obtained so far was lost in the interval.

1. The indications to be followed in traumatic anchylosis are readily found. The nature of the affection primary is known. We may state that most of them are not unfavorable cases to treat and, nevertheless, it is difficult to surmise the extent of the lesions. In certain cases a penetrating articular wound produces a slight reaction. But slight stiffness of the joint remains after the treatment, and this is very easily overcome. At other times an apparently slight traumatism causes persistent functional disturbance.

To all this we must add the consequences of the immobilization. Menzel's experiments demonstrate that in some large animals like the dog, immobilization alone is sufficient to produce an alteration in the cartilages, which would lead to anchylosis if left alone.

M. Reyher, in 1873, tried some new experiments on this subject and obtained the same results; but he explains them differently than Menzel. According to the former, joints, which primarily were not affected by disease and which became anchylosed through immobilization, became so because the synovial fringes which are formed in the neighborhood of the point of contact of the cartilages form adhesions amongst themselves. These are not the result of immobilization, but the result of the movements which lacerate them and cause irritations in the serous fluid or else they are called forth by the propagation of the inflammatory affection produced in the neighborhood to the serous fluid.

The traumatic origin is in no way a contra-indication; the results of the treatment are excellent in cases which I have observed. The worst cases are those in which the false anchylosis was produced after para-articular fractures. Those of the olceranon, for instance, are especially serious.

When stiffness of the elbow has its cause in persisting periarticular infiltration, massage and combined movements yield excellent results. Then again, in certain cases, the mobility of the articulation is destroyed through the forma-

tion of an exuberant callus which we cannot breach. The same may be produced in the knee, more rarely in the wrist.

2. False anchylosis of rheumatic origin presents numerous varieties. They are all the more obstinate if the process is an old one and if the attacks have been frequent. These are, however, not unfavorable cases to treat. The cartilages may present only a slight hypertrophy without synechiæ or productions of new connective tissue, and the change is all confined to the fibrous system, the tendons and the fleshy parts of the muscles. Massage gives results which could not be obtained neither by extension nor by flexion alone.

3. We now come to a series of cases of arthritis of diathetic origin and running a chronic course, interrupted by relapses, which, nevertheless, recover.

As regards false anchylosis due to gout, the best plan to follow would be to leave it alone. Any movement, no matter how slight, would not fail to stir up the primary disease and soon cause us to repent for not having abstained from such a procedure.

It is not the same if it follows a hyperplastic granular synovitis.

The informations derived from pathological anatomy are not very encouraging, they show that an articulation affected by gout is threatened with complete anchylosis; they amply justify distrust and reserve. The fundamental rule ought to be to leave everything alone rather than to maintain the morbid process.

But the white swelling is cured, the fistulous tracts are closed up, the bones have obtained their former consistency. We have to deal with an invalid whose atrophied leg is flexed on the thigh; the latter itself is atrophied; the functions of his arm is lost, his coxo-femoral or scapulo-humeral articulations have in part lost their movements. What are we to do? An amputation or a resection? Sometimes, yes; but not always. If the anchylosis is complete, it is useless; if it is not, let us try to do something. Neither the affection proper, nor

the anatomical conditions, nor the etiology furnishes any contra-indications.

We shall see later on that in incomplete anchylosis strength and perseverance yield unexpected results.

The etiology demands careful investigation. White swelling does not develop in every individual. We have seen a slight traumatism provoking arthritis in some persons suffering from rheumatism; whereas in others a cause just as insignificant terminated in a process which I have endeavored to describe. There are persons with organic defects, whose tissues possess little vitality and reaction; young persons with ganglionic affections; adults with inexhaustible suppurations and often visceral affections which progress insidiously. It would be going too far were we to admit that these irregular and cachectic manifestations are all local manifestations of tuberculosis.

There are non-specific fungous arthrites and bacillar fungous arthrites due to micro-organisms. Mechanical interference is always useful in the former, but in the latter only then when the primary acute symptoms no longer exist and when complete eradication of the bacilli may be suspected. It would be unsound reasoning to say, when we are dealing with false anchylosis of the knee or elbow: "Let us leave it alone, it may, perhaps, have been of microbic origin." If bacteriæ are no longer present, it is impossible to provoke a relapse of local inflammatory symptoms and to disseminate dangerous microorganisms.

Sometimes it may indeed be very difficult to determine whether the bacillar influence exists or not. I remember to have had in my practice amongst many good results two local accidents (in both of them the coxo-femoral joint was involved), where I had every reason to believe that the process in question was under control.

Our method is simple. The procedures have been employed separately, rarely together. It consists of two manipulations, viz., massage and manual rectification of deviations in

consequence of the rupture of adhesions and extension of the retracted capsules and peri-articular tissue. Massage is used in various ways, both before and after rectification; it is of real service in secondary atrophies. No procedure is better to stimulate or to regulate nutrition. It serves to prevent reactions, which are produced by active manipulations. Its physiological action explains this fact.

By means of forced flexion, extension or abduction the fibrous bands are broken up; hæmorrhages and sanguineous infiltrations are sometimes formed in the joint, often also around it. In itself this accident is of no importance, but it does assume quite some importance on account of the consequences that follow.

The irritating action of these extravasations renders some sprains particularly serious. Everybody dreads inflammatory affections, and it is these we think of when the active manœuvre is finished. Absolute immobilization seems indicated; is it not after all the antiphlogistic measure par excellence? It does not impede the absorption of the blood, but it favors the reproduction of the lacerated bands.

It is better to have recourse to a procedure which has demonstrated its utility and which does not contribute to the reproduction of adhesions.

I now come to the straightening of the limb. On one hand we have audacious people who wish to obtain immediate results; and on the other hand, timid ones who are frightened at the slightest crack and who expect the disappearance of the pathological adhesions, I don't know how, without any lacerations.

The sudden rectification (brisement forcé) is sometimes better than the gradual one, sometimes it is not[1]. Few people

(1) In cases where the adhesions are very extensive or the bands are very numerous and short (brides serrces), examination under narcosis may have to be resorted to. I prefer the forced and rapid breaking up of the adhesions under æsthesia to the gradual, progressive and slowly effected correction of the deformity; and this all the more if the patient is sensitive, timid and contracts his muscles very firmly at

have subsequently applied massage. Used at the beginning of every séance to facilitate interference, it must be done thoroughly, frictions and petrissage are then indicated; they soften the tissues and diminish their tension and resistance. They give them a certain flexibility and improve local nutrition. The extent of motion is increased. After extension or flexion, massage becomes resolutive, antiphlogistic and anæsthetic. It consists of effleurage performed for about ten minutes.

We must not only be guided by directions derived from the study of previous treatises, but also by the local affection itself. We often have to deal with children who will not listen to any arguments. They do not suffer so much when left alone. The movements are painful. Of course, they prefer not to suffer. The parents are of no assistance at all. They have heard from one of their friends that the method has given good results, and they do not mind trying it, because it demands neither bistoury nor machines. Very few of them allow chloroform to be administered. They are prejudiced, no doubt, but which practitioner can scorn at prejudices?

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the slightest attempt of correction. It is understood that this forcible breaking up of the ankylosis has always to be followed for some time by rational massage in order to combat the often enormous swelling (intra and extra-capsular), which, under these circumstances, never will fail to occur. In other cases and, particularly, when the false ankylosis depends more upon a retraction of the capsule, a shortening of the ligaments as well as when muscular retraction is the cause of it, the gradual, slow method is much to be preferred. The bands, when they are not too short don't offer a great resistance to the correction. As regards the last cathegory of cases, the capsule, etc., as well as the retracted muscles, these yield to the stretching under narcosis; but as soon as the operation is over they retreat again to the same extent as before, and the joint remains as deformed as before. You may apply a plaster of Paris dressing to combat this tendency, as it is usually done, the pain, especially during the first few days, particularly if you had to break up a good many adhesions, is, notwithstanding the frequent injections of morphine, so great that it is scarcely bearable. And when after some weeks you remove the plaster of Paris there remains always a tendency to relapse and the muscles in the neighborhood of the joint are often in a marked state of atrophy.

We have to trace chronology of massage and rectification. It is important to know what we may expect from each.

If we have to do with immobilization in a vicious situation or with consecutive deformities, we ought to perform preliminary massage for some time. The procedure is but little painful, the improvement is decided. The task is simplified, and we shall be in a better position to perform extension or forced flexion. If retractions prevail, then circumstances are less favorable, and rectifications must be commenced early. It is not necessary to wait until the inflammatory conditions have subsided; in some atropathies this temporization delays the beginning of the treatment and removes the chance of bringing about cure in a relatively short time.

Deformities, retractions and anomalies in the position and functions of a limb may find their cause in: 1) the articulation or its vicinity; 2) in the muscles. We have observed joint lesions, thickenings and retractions of the capsula, formations of false ligaments, tendinous synovitis with adhesions of the tendons to their sheaths, myositis with a diminution of the degree of extension of the muscles. It is easy to find out in which of these the lesions are most pronounced by keeping an account of the seat of the pain and the tumefaction.

After the attempts of rectification the application of massage is often followed by reactionary phenomena; if the operator is not informed of their origin and importance, if he does not take care to warn the patient or those who are interested in him, he will only increase distrust and make his task more difficult. Massage of the joints is followed by a progressing amelioration and the patient very soon plucks up enough courage. On the other hand, after the forced straightening the joint is more painful than before. It is of the greatest importance to tell the patient of these peculiarities before beginning the treatment.

The pain is over, it ceases when the manœuvre is finished. The rest is easily overcome by massage. The cracking produced frightens everybody, but this ought not to be. It is a

sign that the adhesions are broken up, and that portions of the retracted tissue have given way. And this is just what we desire. The sanguineous sugillations and the tumefaction are of no consequence. They will not persist if subsequent massage is accurately performed. In the leg, for instance, it sometimes happens, when retractions of the semi-membranosus, the semi-tendinosus muscles or the biceps exist, that at the beginning tumefaction of the lower part of the thigh is observed. Later on the same phenomenon will be produced at the upper part. All this is easily overcome by effleurage.

In flexion or forced extension the resistances offered and the state of the osseous system must be taken into account. If we have to do with people in whom this is improperly developed, we must take care not to have the force act on too long levers so as to prevent fractures. If the limb is in a state of flexion, in consequence of the tendency which this anomaly has to reproduce itself, one does not incur the risk of exceeding the desired angle by artificial rectification.

In incomplete anchylosis the contra-indications are not numerous. I only know of senility, weakness and extreme nervous impressibility. In the last cases, temporization is indispensable. It is useless to begin a treatment which must be interrupted. The invalid must be patient; he must get appropriate medication and his general condition must be built up and then it will always be time enough to begin.

*Anchylosis of the Shoulder.*—Active interference is nearly always necessary. Bonnet says that we should proceed in the same way as in all other articulations, that is, by gentle and graduated movements or else by violent rupture of the adhesions[1].

The following is my method of procedure: The patient is placed in an armchair of which the back does not extend above his shoulder. I make him sit near the edge so that he may be able to move his arm freely when he has to perform

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(1) Bonnet. Traité de therapeutique des maladies articulaires.

the movements. If, for instance, we have to deal with the left shoulder, we take a hold of it and hold it steady by very firm pressure[1], at the same time with the other hand we seize the arm, above the elbow. Abduction is then made in the direction of the greatest resistance, that is to say, nearly always from below upwards and backwards. As soon as the resistance is less, I add movements of circumduction (moulinet) whose excursion I gradually augment.

One must not let the arm drop directly after the séance, it ought to be kept in abduction for a minute or two.

If the resistance is considerable, or if early results are to be obtained, forced abduction is preferable; this procedure allows of more force to be displayed. The patient sits on a rather high chair, the physician stoops over in front of him on the affected side. The invalid leans with his elbow against the physician's shoulder. The operator then crosses both hands and places them on the diseased shoulder in order to fix the shoulderblade. He then rises, lifting up the patients arm. This procedure, which is more powerful than the preceeding one, is also more painful. If the movements are satisfactory, one may return to the first one.

During the last stage of the treatment, the patient ought himself to make active movements. Those of the moulinet, with or without dumb-bells, seem to me to be the simplest and best ones. It has been claimed that these active movements can provoke inflammatory relapses, but I have never seen any.

OBSERVATION VI.

*Stiffness of the Shoulder Joint Secondary to Chronic Arthritis.—Forced Rectification.—Massage.—Great Amelioration.*

Mrs. C., 42 years old, from Lyons, experienced 10 years ago, after a stay at the sea shore, violent pains in the right shoulder. The pains ceased after a few weeks. The same trouble reappeared without any

(1) This precaution is indicated in consequence of the mobility of the shoulderplate, which otherwise follows all the movements of the arm; this is also one of the reasons why this anchylosis is to a certain extent easily tolerated by the patients. Without preliminary fixation it would be impossible to bring about a proper rectification, to tear the adhesions or to overcome the muscular or capsular retractions.

appreciable cause the following winter, but was soon followed by marked improvement. Gradually she noticed inconvenience in moving her arm and persistent but not very violent pain. Electricity (galvanization). The pain disappeared almost entirely and the patient was able to use her arm enough to tend to her household without much difficulty. Until November, 1883, the result remained good. The patient considered herself even definitely cured. At this period a light attack. The movements of the arm became unfortunately considerably more limited, and she complained of great fatigue in it. It became impossible for her to lift anything heavy. The stiffness of the shoulder increased, so that she was unable to continue her work, and even to dress herself.

I saw this patient for the first time in March, 1885. The arm hangs down, the forearm is in a position of half flexion. The deltoid and the supra-and infraspinatus muscles are somewhat atrophied; slight pain on pressure in the scapulo-humeral joint. In immobilizing the shoulderplate, the arm cannot be moved more than 65° from the thorax. When the shoulderplate is not supported, the arm can be lifted to a horizontal position, but the patient has difficulty in maintaining it and can only do so for a short time. The arm is more easily brought forward, although it cannot pass beyond the median line. Backward movement extends hardly as far as the big trochanter. She is unable to lift her hand up to her ear. The passive movements are somewhat more extended. Massage of the joint and the periarticular muscles. The pain on pressure mentioned above disappears. Forced extension.

During the first séances crackling and violent pain radiating into the arm and forearm. After seven weeks all this had passed. At this period the articular stiffness is insignificant. When the shoulderplate is immobilized, she can raise her arm horizontally and maintain it for quite a long time in this position without getting fatigued. She can easily put her hand to the back of her neck, but not as far as the other side of the neck. Gymnastics.

*Ankylosis of the Elbow.*—In ankylosis of the elbow, I firmly grasp the lower extremity of the arm with my left hand and the fore-arm a little above the wrist. I then impart gradual steady movements to it in order to increase extension by degrees until its angle exceeds the greatest preceding one. The arm must be kept extended two minutes or more, if the invalid can bear it. If the pain is to acute, recourse is had to effleurage, as usual.

We may also proceed in the following manner: The patient kneels down and puts his extended arm on a padded bench or, if this is not possible, on an ordinary table; the

physician stands at his side. We might also have him sit in an appropriate armchair or sofa so that the arm leans on a flat surface from the shoulder to the elbow. The manœuvres consist in gradually increasing the angle formed by the forearm and the arm by using more or less force. In order to accomplish this, alternating movements of flexion and extension are necessary and the patient ought to practice these as often as he can. It is useless to add that here as well as in the shoulder careful secondary massage is indicated.

If we have to deal with a more rare variety of ankylosis, anchylosis in extension, the procedures are the same; the movements must, of course, be made in the opposite direction; if necessary, pronation and supination must be practiced as well as flexion. Intelligent and constant participation on the part of the patient is required. The latter must persevere in all these movements, even in the painful ones.

If we have to deal with ankylosis in flexion, I advise gymnastic exercises; among others, suspension by the arms, if possible. To do this but a very simple apparatus is needed. This consists of a rope fastened to a ring or hook, which is fixed at a certain height.

Ankylosis in supination or pronation is rarely an isolated affection. If we have to deal with the former one, the movements of extension and flexion must be executed with great precision, whilst pronation would be impossible. Rarely does an absolute integrity of the two movements of rotation present itself, if the others are seriously impeded. Let us suppose that we desire to remedy the immobilization of the left elbow in supination. We take hold of the elbow with the left hand in order to steady it; at the same time we grasp the forearm a little above the wrist, our thumb turned towards the palm, and communicate to the forearm several forced movements of pronation. If ankylosis is formed in pronation, the hands must be placed in the opposite direction.

As we progress our task becomes easier. In the pages devoted to the general etiology of false ankylosis, in those of the

elbow and shoulder joints, we have seen most of the peculiarities that we meet with in the wrist.

*Ankylosis of the Wrist.*—Patients get easily accustomed to a diminution of mobility in the radio-carpal articulation; they can endure it better than that of the phalangeal or metacarpo-phalangeal articulations; stiffness in the wrist is less of a deformity than an inconvenience.

*Ankylosis of the Fingers (Toes).*—Patients get more easily accustomed to ankylosis of the wrist than of the phalanges. This is always regarded as a deformity very difficult to put up with. The straightening is painful because the tendinous sheaths, as well as the articulation, are nearly always affected. In all cases repeated interference, active and passive movements are of absolute necessity. I have often seen, when these joints had remained in flexion for a long time, a sort of epiphysal osteophytis formed at the points very remote from each other, and at the same time atrophy of the nearest parts, produced by pressure of these respective opposed projections. These cases are not susceptible to treatment by massage.

In cases of straigtening immobilized fingers in a state of flexion, I employ, besides massage, a very simple apparatus consisting of a little board, pierced by rectangular holes, through each of which passes the handle of an India-rubber strap, which is tightened as much as the patient can bear. The apparatus is used at least half an hour a day. During the first moments the pain is rather severe, but with a little good will on the part of the patient, he will soon be able to endure it quite well.

All those who have studied the therapeutics of false ankylosis, particularly Bonnet[1], Brodhurst, Nussbaum, insist on the difficulty of treating the coxo-femoral articulation.

*Ankylosis of the Coxo-femoral Articulation.*—Rigidity and muscular retractions are not to be neglected. If the thigh is flexed on the abdomen, which is most frequently

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(1) Bonnet, loco cit.

the case, the retraction of the rectus femoris and of the psoas is a serious obstacle to the rectification. Sometimes this is a more serious obstacle than those which exist in the joint. The patient is lying on a properly padded table, so that the external surface of the leg reaches beyond it. The pelvis is firmly fixed by an assistant, the thigh is taken hold of above the knee, and we then proceed as in the other articulations. A great deal of strength is often necessary in order to overcome the resistance. The reaction is not great, unless we have to deal with a retraction of the rectus muscle. Rectification proceeded with in accordance with the precautions indicated does not expose to any fractures.

Simultaneously with flexion adductions may exist, but forced extension generally causes it to disappear. If at the end of treatment adduction persists, this is easily overcome by appropriate movements.

*Stiffness of the Knee Joint.*—The patient is seated on a firm bench, properly constructed. Let us suppose that we have to remedy the right knee. With the left hand we seize the thigh above the knee, whereas the right one grasps the leg above the tibio-tarsial articulation, so that the lever may be as long as possible. Successive movements are imparted to the leg, in order to form its maximum angle with the thigh. In every sitting this procedure is repeated four or five times, and each time we gain a little more. In this as well as in every other articulation we must take care not to abandon the limb directly after the séance, but to maintain it in extension or flexion for some time, one or two minutes or even longer if the patient can bear it. We must never let the limb drop down, but gently bring it back to the first position; in this way the patient does not feel any pain. If the irritation is considerable, massage will soon quiet it. Effleurage and slight frictions give excellent results even in cases of very marked reaction.

Forced flexion is performed when the leg is immobilized in extension. It is seized simultaneously with the thigh as we

have indicated it. The movements are naturally performed in the opposite direction, and we endeavor to render the angle formed by the leg and thigh more acute. Moreover, it is rare to find extension or flexion existing alone; most frequently one surpasses the other.

In powerful and robust persons extension and flexion may be performed at the same sitting, especially if but a slight reaction follows every attempt. If the deformity is in flexion, forced extension is made, in the opposite case flexion. But we are sometimes obliged to combine these two manœuvres as we shall presently see. I begin to work on the most pronounced deformity and on the one which will be more difficult to overcome. The same rule ought to be observed in articulations of the leg, the foot, the wrist, the fingers and toes.

When a deformity in flexion has for its cause a retraction of the posterior group of muscles of the thigh, the manœuvre is no longer sufficient. In this case, if the leg is flexed, the forced extension must be performed on the shoulder; this procedure, which is very powerful, is more rarely applied than the other.

I apply it as follows: Let us suppose that we have to deal with a false ankylosis of the right knee with flexion of the leg on the thigh. The patient has to lie down on a sofa in such a way that the right half of the pelvis and the corresponding lower limb is a little nearer the edge; the physician himself stands on the right side of the patient and leans with his knee flexed against the edge of the sofa, in such a way that the diseased leg rests by its posterior surface on the physicians right shoulder. The doctor grasps the limb with both hands above the knee, then rises slowly, still holding the ankylosed knee; this manœuvre is repeated four or five times at every séance.

As I have remarked, it is indispensable to immobilize the other leg; without this precaution the patient will move this side, the pelvis will be slightly displaced and only an insufficient rectification is obtained.

## OBSERVATION VII.

*Stiffness of the Articulation of the Knee; Organic Contracture of the Muscles of the Posterior Region of the Thigh; Flexion of the Leg on the Thigh and Also Some Flexion of the Thigh on the Pelvis.—Apparent Deviation of the Vertebral Column to the left secondary to a Myositis of the Quadratus Lumborum, due to Traumatism.—Massage.—Forced Extension.—Cure.*

M. S., 38 years old, a baker. In August, 1882, in lifting a bag of flour he experiences violent pain in the left gluteal region. The patient is nevertheless able to attend to his business the following days; but the pain reappears with its former intensity as soon as he is obliged to make an effort to work. He only resorts to methodical treatment in March, 1883. Several vesicatories; the pain only increases; hydroterapy does not succeed any better. The leg on the affected side begins to atrophy; violent pain on the right side of the knee, tumefaction in the region of the right buttock; walking extensively difficult. A surgeon of Bordeaux diagnosticates a muscular rupture in the lumbar region and prescribes the waters of Bareges. The patient stayed there a month, but without much benefit. At the end of the season the leg had even considerably shortened. Disheartened, he applied to bone-setters. These resorted to violent extension. The application of these procedures was followed by an apparent curvature of the body on the affected side, walking became impossible, the patient could not take a step, and not even sit down without help. His general state of health is extremely modified under these circumstances in an unfavorable way.

I saw the patient for the first time in March, 1884. The leg presented marked flexion at the knee and formed an angle of 135° with the thigh. This was flabby and thin. It cannot be extended beyond the limit mentioned. Flexion almost normal. Forced extension very painful and attended by crackling in the neighborhood of the knee. Apparent deviation of the axis of the body in the lumbar region. Walking very difficult and attended by marked limping. The lower segment of the body as well as the head deviates to the left.

On examination of the lumbar region, a deposit of myositis is found, probably corresponding to the rupture of muscular attachments of the quadratus lumborum to the last ribs. Massage of the lumbar region. Forced extension of the contracture of the leg. This contracture is to a large extent of a muscular nature (organic) and has its seat in the muscles in the posterior region of the thigh. Pain and tumefaction followed almost immediately after traction in the lower part of the thigh and in the neighborhood of the knee. They are soon alleviated by massage. Thanks to this the pain and swelling were so much relieved after the sitting (a quarter of an hour) that the patient was able to walk. After 8 or 10 sittings there was no crackling and no tumefaction after the manipulations. Very slight reaction in the knee joint. A fortnight after the beginning of the treatment the patient was able to take rather long walks. After 6 weeks he was quite cured and walked as well as before the injury. The limping was

almost imperceptible. There remained but slight inclination of the body to the left. The atrophy of the muscles of the thigh had disappeared, thanks to energetic massage; no traces of the lumbar myositis remained.

Some months later I received a very explicit letter from this patient; the result obtained persisted. There only remained a very slight inclination of the body to the left.

I have treated several cases of stiffness of the *tibio-tarsal* joint with equal success. The manœuvres are very simple and do not require and special description.

§ 6.—*Massage in Hygromata and Affections of the Submuscular and Subcutaneous Serous Bursae.*

*Hygromata.*—Massage is indicated in hygromata for the same reason that it is in chronic hydrarthrosis.

Hygromata of the knee is a professional affection. It might almost be called the disease of the raboteurs de parquets[1]. Most the people affected with it take no notice of it until they experience an inconvenience; as soon as they have to stop their work they go to a hospital and are treated by the classic means: compression, painting with iodine, sometimes puncture or incision. That is probably why its observation is so rare.

Hygromata of the popliteal serous bursae are more frequent than we might be led to think. They are most often of rheumatic origin and complicate arthritis of the knee. In all the cases I had to treat, I have obtained a complete cure[2].

Inflammation of the *subdeltoidean* bursa.—We have observed and several times treated with success an affection comparable from an anatomical-pathological point of view to hygromata. It is found at any age and in all classes of society; its origin, very often traumatic, may also be spontaneous

(1) See Layet. Hygiène des professions et des industries, précédée, d'une étude génerale des moyens de prévenir et de combattreles effets nuisibles de tout travail professionel, 1875.

(2) A communication sometimes exists between the cavity of the joint and the median popliteal bursa, probably a remnant of intra-uterine life. In cases where one or both become the seat of an effusion, we are confronted with considerable difficulties.

(rheumatic). ' It is acute or chronic; it is painful and hinders the movements of the arm to such an extent as to become a real source of deformity.

In a work on luxation of the long humeral biceps tendon, published in 1867, Jarjavay states that contusions of the shoulder and torsions of the arm often produce inflammation of the sub-acromial serous bursa. This phlegmasia, having an acute character, presents as its principal symptoms swelling of the fleshy part of the shoulder, pain which often restricts the movements of the arm, sometimes even impeding them[1].

This work passed unnoticed until 1872, when Duplay, who had been able to verify the views entertained by Jarjavay, described a chronic form of this disease.

He says: "The affection is extremely common and not a month passes by without some cases being observed in the big hospitals at Paris. In spite of its frequency, periarthritis of the shoulder seems to me to be very little known, or at least I do not think it has been sufficiently described; nor do I believe that its nature and way of treatment have been fully determined[2].

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(1) Jarjavay. Gaz. Med. 1867, 2 ème série t. I v, p. 325.

(2) Duplay. De la periarthrite scapulo-humerale et des raideurs de l'épaule, qui en sont la conséquence. (Arch. gen. de médecine, 6ème série, t. XX, Nov. 1872, p. 513).

## CHAPTER V.

### *Massage in Fractures.*

In the first edition of my treatise, in 1884, the chapter devoted to fractures, contained some rather bold innovations. What then seemed to be a paradox has become a therapeutical reality. At all times it was claimed that rigorous and prolonged immobilization, employed in the treatment of certain fractures, might cause disturbances in the future action of the nearest joint. A. Paré, J. L. Petit, Warner, Comper, Flajani, Ravaton, Morel Lavallé, etc., had proposed more or less complicated and rational means in order to prevent secondary ankylosis. Their utility was so little admitted that many surgeons in our time would not listen to them. Verneuil has well characterized the scare of those who mistrusted the former classic procedures; he calls it ankylophobia.

The advantages of early mobilization in the treatment of certain fractures were investigated in 1880 by the "Surgical Society of Paris."

Desprès reported a case to demonstrate its advantages. Verneuil replied that it was wrong to attribute secondary ankylosis to immobilization. The cause of ankylosis is the formation of a fibrous callus.

The discussion shows that the surgeons were far from being agreed on the principles of rational treatment of fractures. Mare Sée and Lannelongue were of the same opinion as Verneuil, and always wanted immobilization. Lucas-Championniére and Marjolin were much less convinced; they admitted with Desprès that in some cases at least one might deviate from the general rule. The same question had been

raised abroad. Menzel, from Triest, had proposed passive movements every other day in fractures of the radius; Starke resorted to early movements in fractures of the radius and fibula; Schede proceeded similarly in fractures of the humerus.

There is no evidence that in applying the method energetically and perseveringly a satisfactory result may not be obtained; unfortunately it is not compatible with the necessity of absolute immobilization, resorted to by nearly everybody in the treatment of fractures. We here meet with the same doctrinal controverse as in the therapeutics on arthropathies. The fundamental indication in the treatment of the loss of continuity of the osseous system is to facilitate by every means the reunion, that is to say, the formation of a solid callus; movements, pressure and simple effleurage ought to be avoided; the ideal type of apparatus is a muff closed at both ends which maintains both osseous fragments in rigorous immobilization[1].

It has not been proven that massage when properly performed at the beginning, hinders solidification. Very few surgeons are in favor of applying an early apparatus to a swollen limb; of immediate immobilization of the fragments which are displaced and separated by a more or less abundant mass of blood. Most of them apply a temporary apparatus and leave it to nature to remove the primary inflammation before resorting to a permanent appliance. It seems to me quite natural to aid and hasten the absorption of injurious liquids. What we have obtained in traumatic hæmathrosis and in articular phlegmasies followed by effusion, we may likewise achieve here without any more inconvenience than in the former conditions. Thus we see that massage is indicated as an early medication serving as an introduction to another one and paving the way for it.

This rule of applying absolute mobilization is subject to many exceptions; its strict observance presents serious incon-

(1) See Gaujot. Arsenal de la chirurgie contemporaine.

veniences in our daily practice. The knowledge of the annoyances of such a widespread method marked a progress no doubt, but in the opposite direction. Did there exist a means of palliating the methods? Is it possible to formulate rules as regards the methodic application of massage and passive movements, which might serve as vade mecum to all practitioners so that all might follow them without fear or remorse, being certain that no danger will follow? It has been tried.

Massage is useful at two stages in the treatment of solution of continuity of the osseous system; 1) at the beginning, because it favors the absorption of sanguineous and serous effusion and diminishes tumefaction and local tenderness; 2) after the removal of the apparatus. It is only through massage that functional weakness, resulting from atrophy of certain muscles, indurations or retractions in the neighborhood of the callus, can be overcome.

I must admit that the chapter in my first edition of *Traité du Massage* had not the stamp of great originality, because I had at that moment not yet applied massage to fractures. It was only after considerable meditation that I concluded to propose it. And I am glad that I did tread this path, because nearly all that I proposed has been adopted and massage has become a therapeutic agent of incontestable utility in the treatment of fractures. In 1884, the same year that my work appeared, Berne performed massage in fractures of the fibula. In June, 1885, he stated his theories and the results of his experience in a public lecture at the hospital Bichat. He has since that time published a more extensive work in which I am happy to see my ideas on massage adopted and conformed by this distinguished practitioner[1].

At the first meeting of the French Congress of Surgery, in April, 1885, Tilanus, of Amsterdam, communicated a comparative study on the treatment of fractures of the patella by

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(1) G. Berne. Le massage, manuel theorique et therapeutic. Paris, 1894

immobilization and and the means of external co-optation and treatment by compression, massage and movements.

At the meeting in June, 1886, Lucas Championniere also read a paper on the treatment of fractures of the radius and fibula by massage.

The idea had made its way successfully when Maison's[1] and Lapervenche's[2] theses appeared. The method had, perhaps, gone a little too far; but this rapid popularity is by no means surprising. The effects of massage in fractures are excellent and it is easy to see why. It is not necessary to have vast experience, nor is it necessary to ponder for a long time over the best method to be used or to seek minute indications. In the hospitals, the surgical students can very well carry out the necessary indications under the guidance of a chief surgeon; the only thing is not to adopt different, perhaps contradictory procedures or to compromise everything, as it is sometimes done by empirics by awkward brutality.

Some tibio-tarsal sprains are accompanied by fractures of the lower end of the fibula. I have had the opportunity of seeing and treating patients in which this peculiarity existed. They were nearly always countrymen of mine, who declared that they had sprained their foot, a sprain so painful that walking became impossible. They were right to a certain extent, because laceration of the soft parts and sanguineous effusions did exist. The sprain was there, but at the same time there was a solution of continuity of the fibula which they did not suspect and at the information of which they were disagreeably surprised.

Massage in these conditions affords the same success as in simple sprains; it hastens the absorption of the sanguineous effusion, diminishes the neighboring infiltration and the pain: it is at the same time a means of diagnosis as well as of treatment.

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(1) Maison. La mobilisation et le massage dans le traitement des fractures para-articulaires, thèse de doctorat, Paris, November, 1889, No. 6.

(2) Lapervenche. Fractures juxta-articulaires, leur traitement par le massage, thèse de doctorat, Paris, 1886.

There exist only two contra-indications. The principal one is the mobility of the fragments. When there is a marked and definite deformity it is better not to undertake massage. The second one is the integrity of the skin. It is clear that this latter contra-indication is far from being absolute.

We must begin with superficial effleurage. It is the best way of sparing all useless pain to the invalid and we are not so liable to produce any separation of the fragments, if the latter does not already exist; furthermore, we shall not interfere with reduction, if it has already been accomplished. Systematic treatment by massage excludes the possibility of rigorous immobilization by means of plaster of paris, cast or splint. Whatever is applied to a roller bandage with or without cotton, is taken off before each seance, and reapplied after. If it is indispensable to immobilize the limb in order not to obtain improper union, one might wait a little before applying the apparatus and massage, so that the disappearance of the swelling and the blood effusive between and around the fragments is hastened. The sittings last for a quarter of an hour or twenty minutes, and must be repeated during the day as often as possible.

I have in these cases sometimes successfully performed what the Germans call preparatory massage. It consists of centripetal frictions above the seat of fracture. In this way we produce venous and lymphatic depletion and obtain better results from consecutive massage.

In fractures as well as in sprains, luxations and chronic articular affections, the masseur intends to stimulate absorption of sanguineous extravasations, interstitial effusions and by contrecoup to favor the reunion of the soft parts, to diminish the pain, improve local nutrition and prevent articular stiffness and consequent atrophies. Nearly all authors who have studied this question admit that these results are nearly always attained.

Thus we see that massage in fractures now answers the numerous indications which partly had been foreseen in 1894.

It facilitates the diagnosis, allows us to apply an early irremovable apparatus when the latter is indispensable, because massage hastens the absorption of the sanguineous effusion and diminishes the swelling; it prevents future accidents because it does away with lengthy immobilization and stimulates local nutrition.

We are going to see its applications in different fractures.

*Fractures of the humerus.*

Lucas-Championniére relates a case of fracture of the humerus above the lower insertion of the deltoid muscle, complicated by a fracture of the radius[1]. It was treated by immobilization. After union of the fragments, the movements of the scapulo-humeral articulation were painful and difficult. Massage was then employed and, thanks to this procedure, the patient was able to leave the hospital two days after the occurrence of the accident, in full possession of all the movements.

Rafin insists upon this method of treatment in case of fracture of the humerus, claiming rapid recovery.[2] In fractures of the condoyle of the humerus Giraldes mobilizes after the seventh day. De Saint-Germain advises to wait until the thirtieth day before beginning passive movements. The child which came under Rafin's observation had entered the hospital on the first of May, almost immediately after the accident; the abnormal mobility which then existed had disappeared on the 10th day of the same month.

*Massage in fractures of the radius and ulna.*

1.—*Radius.*—Some years ago I published a case in which massage had been employed on a fracture of the radius. Still the application of this procedure had been timed and limited; it had been employed for the purpose of reducing tumefaction

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(1) Bulletin de la societé de chirurgie, séance of the 7th of July, 1886, p. 568.

(2) Rafin. Etude clirique sur le massage appliqué au traitement des fractures juxta-articulaires, thèse de doctorat, Lyon, 1888, librairie Baillière.

and relieving pain; the author, Mr. Gerst, followed the principle as laid down by Bizet. After the desired effect had been obtained, he mobilized the limb by means of a plater of paris dressing, according to the classical method. Since that time massage has often been applied in fracture of the radius, and particularly at its lower extremity. Lucas-Championniere, Gosselin, Tillaux, Gurlt and others have studied the question of massage and immobilization. Schede, from Hamburg, returned to it in 1884 at a congress of German surgeons, held at Berlin. He insisted upon the frequent occurrence of partial ankylosis of the hand and finger joints, of adhesions of the tendons to their sheaths and of atrophy and retraction of the muscles. Nothing like this had ever been observed in cases of para-articular fracture of the radius treated by mobilization and massage. In my notes I have referred to eight personal observations on fracture of the radius, most of them affecting its lower extremity, treated by massage and relative mobilization[1]. Solid union and complete after 12-18 days. We have long ago abandoned the ideas of Malgaigne, who allowed his apparatus to remain for 30 days[2].

2.—*Cubitus.*—Of all fractures of the ulna those of the olecranon are the most frequent to cause vicious union and articular rotundity. Péan says: Unless both fragments are kept in perfect contact, no osseous union is possible. A fibrous band more or less resistant serves as a means of union between the two fragments, and transmits the movements of the olecranon to the rest of the ulna just in the same way as the ligamentum patellæ transmits them from the patella to the tibia. In nine hundred and twenty-seven cases observed by Hamilton, not a single osseous callus was noticed. This mode of union is then not only exceptional but extraordinary[3].

To establish a treatment in the hope of obtaining it, is to

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(1) Here only a roller bandage is applied around the joint. The whole arm is supported in a sling.

(2) Fractures et luxations, t. 1.

(3) Nélaton. Pathologie chirurgicale, 2ème, — edition t. II, p. 337.

search for wonders. It is not surprising to find that some enterprising great minds have quite abandoned traditions and cast aside all former ideas of the classic methods. If we are to have a pseudarthrosis, well and good, but let us try to make the best of it. It is starting with this idea that Peter Camper abandoned immobilization and that Kluyskens, in his thesis on the treatment of fractures of the patella and elbow, recommended early gymnastics.

In view of these facts and of a discussion which will appear later on, Ludwig Sellberg tried, in a nine-year-old child, to treat a fracture of the olecranon, where no great amount of rigidity had to be overcome, by means of massage and passive movements. He attained the object in view, the child was able to use its arm and the humero-ulnar joint showed neither ankylosis nor stiffness at the end of the treatment.

A similar observation has been published by Lucas- Championniére in the already mentioned work[1].

I have no personal experience in the treatment of fracture of the ulna by means of massage. I regret very much that a case of this kind has not fallen into my hands.

*Massage in fractures of the upper part of the femur (fractures of the neck).*

Léonardon Lapervenche reported three cases of fractures of the upper extremity of this bone treated by massage. The results were satisfactory in all three cases. The first treated person was a woman 70 years old, who had received an intracapsular fracture of the neck of the femur in falling on the edge of a sidewalk. There was a shortening of about three-quarters of an inch (18 mm.) The limb was placed on a cushion forming a gutter in order to make sure of its being on a level plane. From the very first day massage was performed for a quarter of an hour. The remaining séances were given every other day. After the sixth day the pain had entirely disappeared. This person was admitted into the hospital on the 14th of October; on the 5th of November she was able to get up and walk about on crutches; on the 19th she left the hos-

pital, supporting herself by a stick. There was only about 0,570 inches (15 mm.) shortening.

The second patient, 75 years old, had also suffered an intra-capsular fracture while getting out of bed. She was massaged every other day for twenty minutes. The results obtained in the latter case were not as good as in the former one; still, they were satisfactory enough to justify the employment of the same procedure in similar cares. This person was enabled to get up and walk about with the help of crutches after 35 days; union was firm; voluntary movements were easy. She was able to lean on her foot to a slight degree, and only suffered shortening of but 0,787 inches (2 cm.)

In the third and last case the patient, who was 68 years old, was able to walk on crutches on the thirtieth day and after forty days was able to walk about by the aid of a stick.

Every time that there exists local pain, accompanied by swelling or chafing of the safe parts, one ought to massage. Kleen's experiment shows that solidification may be facilitated.

*Massage in fractures of the patella.*

It was for a long time supposed that the reunion of the divided fragments of the patella by an osseous callus was impossible. If this be true, the problem would be easily solved. No regard need be had for the callus; concentrate all attention to the joint proper, so as to preserve its movements without depriving the leg of its support.

The first experiments conducted on animals seemed to confirm the old ideas relating to the nature of the callus. Gulliver could never obtain a perfect osseous union in dogs, when the fibrous capsula was torn. Astley Cooper was no more successful[1]. Since that period, facts have accumulated, showing that union does occur.

The possibility of osseous union is therefore not to be disputed. But the main object is to know whether it presents

(1) Cooper. Oeuvres chir. Chassaignac et Richelot translation, Paris, p. 164.

enough advantages, that we should strive for it, whether, after osseous union has taken place, the femoro-tibial joint is just as useful as before.

Surgeons have not considered the question from this standpoint; they have, and not without foundation, taken into consideration the inconveniences caused by too loose fibrous union. Pean says: "The mode of reunion causes an invincible obstacle to certain professions." The same author adds: "It is true that I saw in the service of Désormeaux a porter, who had not lost any of his strength, though the separation of the fragments was considerable. Others have observed the same. It is desirable that the question should be definitely solved. Is an excessively long, fibrous band more inconvenient than a very short mode of union? Is the stiffness only temporary, and can we hope that it will disappear spontaneously? On the solution of this problem depends the indications of massage and the passive movements of fractures of the patella. The first one may be applied in two different ways: 1. At the beginning as in fractures of the olecranon, in order to modify immediate articular inflammations, the pain, effusion and tumefaction. 2. It is used, when the immobilizing apparatus is removed, to restore elasticity to the capsula and ligaments, and to cause the disappearance of hyperplastic products left by immobilization. The third method of procedure is much more bold than the preceding ones. No attempt at bringing the fragments together is here made. What the surgeon tries to avoid is future immobilization; he does not mind the union. Mezger, who has introduced this mode of treatment into our therapeutics, does not seem to have great confidence in surgical procedures, which are intended to limit the extent of the new method in uniting the fragments. Whatever may be done, the patient will always retain a deformed knee joint. The best he can do is to get accustomed to the affection and disregard the effects as much as possible, making use of flexion, extension and support. The communication of Professor Tilanus, of Amsterdam, read at the first meeting of the Congress of French

Surgeons, in April, 1885, brought the attention of the French medical body to this subject..

The statistics compiled by Tilanus show, as he had claimed, that fractures of the patella are more easily cured by compression, massage and passive movements than by immobilization.

At about the same time Lucas-Championniére and Tripier, of Lyons, tried to push the method so highly spoken of by the "Amsterdam School" to the front. A patient in Tripier's clinic with fracture of the patella was cured without the ordinary immobilizing apparatus by compression, massage and articular movements. Leonardon Lapervenche has successfully performed massage in fractures of the patella, in the various clinics he attended. Mezger's bold intervention and Tilanus' communication form the foundation to a new method of treatise fractures of the patella.

Ever since Hippocrates surgeons have tried to restore the morphological integrity of the limb and induce the formation of union in the divided bone. The new school regarded this from a different standpoint. Little importance was attached to the union or separation of the fragments, if the patient was able to walk and use his lower limb after as well as before the accident. It is better to possess a leg that can be used, that can be flexed and extended with a patella split into two, than to have a rigid leg with the patella intact. The occurrence of secondary affections are the same as in all intra or para-articular fractures. They are muscular atrophy and retraction of the capsula. Let us prevent these and we shall cure our patient as near as we can. The object of movement and massage is to prevent atrophy of the crural triceps, to favor absorption of the serous fluid contained in the articular synovial surrounding it. As a rule, a good result is obtained; atrophy and arthritis are prevented, pain and local tumefaction disappear very soon.

It is now important to find out whether the object in view has really been achieved, whether a femoro-tibial joint with a fragmented patella is as good as one in which this bone is in-

tact. Surgeons are far from being unanimous on this point. After having excited a keen interest, almost enthusiasm, this new method has arrived at a less brilliant stage. Are we to reject massage in the treatment of fractures of the patella, because it is not always the sole indication? By no means. Even if we desire to obtain the best possible union, massage may be used as a preliminary or adjuvant medication.

I do not believe that we are ever justified in proposing in all cases one single method, and in neglecting accessory indications. Massage and passive movements are of use only then when they cannot increase the separation of the fragments and prevent the formation of the callus. On the other hand, we must never lose sight of the condition of the crural triceps; we must overcome its atrophy, which is the most important cause of future functional disorders.

§ 5.—*Massage in fractures of the lower extremity of the fibula.*

Nearly all authors who have studied massage mention cases of fractures of the fibula in which massage has achieved wonderful results. Mr. Lucas-Championniére observed nine cases; Mr. Maison ten; Mr. Leonardon Lapervenche ten, and Mr. Mafin five. In all of these cases, immediate inflammatory signs were prevented and union was easier than when treated by immobilization alone.

According to Malgaigne, complete union is brought about in thirty days, provided the position of the limb be not altered. But it is not because the time necessary for union to form is shortened that massage is superior to any other method of treatment applied up to now.

Everybody knows well the state the patient is in, when after some weeks of immobilization the plaster dressing is removed and he is allowed to walk. Not only is the tibio-tarsal articulation but often also the small joints of the foot, particularly in old people, and in those who suffer from rheumatism, the seat of an effusion. Later on I shall speak of the more or less marked atrophy, in which all the muscles in the neighborhood

of the joint were found. None of these unpleasant results will happen if you pursue the new method. In following this new method the patient at the moment he begins to use his limb experiences no difficulty at all[1].

The analgesic influence of massage must not be underestimated either. Thanks to the beneficial effect of effleurage the pain at the seat of the fracture as well as the pain which resides in the tibio-tarsal articulation and the neighboring soft parts disappears after a few days. It really seems as if the sprain, which always complicates the fracture, would play the principal part and the fracture be of only secondary importance. How often has not a fracture been mistaken for an ordinary sprain, and been cured without any special treatment, to the great delight of the patient? There need not be the slightest apprehension that a displacement of the fragments will occur if massage is properly performed. Even if in most of the cases, thanks to the well known deviation of the foot, it is not difficult to discover the existence of a fracture, still it is not always so easy. The characteristic displacement may be very little pronounced and the large swelling of the tissues may prevent you from discovering the seat of the fracture. Apply massage and you will be able already after a single séance to make a positive diagnosis.

The same treatment may be applied with a similar good effect in cases where there is laceration of the internal malleolus or where you have to do with a real bimalleolar fracture. After every séance you resort to passive movements. These must be performed carefully, avoiding great excursions. The only necessary apparatus is a roller bandage which is to be removed before every séance and to be reapplied after the séance. For a fortnight the patient is not allowed to walk. After this time he may be allowed to walk short distances.

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(1) I can recall among other cases, the case of a diplomat, high in rank, who having been treated by a great surgeon in Paris, according to the old method, was not free from his trouble until 4 months had elapsed after commencement of treatment.

The duration of the treatment in my cases lasted three weeks. In one case where I had to deal with a very young man, 18 days were already sufficient to obtain a cure.

Massage has also been used in fractures of the *shaft* of the bones. It is clear that it cannot render the same services here as when applied to fractures in the neighborhood of a joint. It may be useful during the first days to ameliorate the disorders, which follow the solution of continuity of the osseous levers, to alleviate the pain and to hasten the disappearance of the swelling; later on it may be used and with beneficial effect to overcome the persisting functional weakness.

The chapter on massage in fractures had already been written when at the end of last year Lucas-Championnière's large monographic work on the subject appeared.

## CHAPTER VI.

*Massage in Affections of the Muscular System.*—If we were to tabulate the indications of massage in order of its frequency the muscles would certainly occupy a place next to the articulation. Perhaps they would have to be placed even before the joints. It is in affections of the muscular system that massage was first performed empirically. When a violent, localized pain persisted after an accident, friction was performed and the patient felt better after it. Those who most often had recourse to these therapeutic measures, would have been embarrassed to explain the results and to say why they had performed massage and why they had been successful. At first, they used friction at random, in consequence of vague reminiscences, and the patient was improved; later on other persons profited by the acquired experience. But the time arrived when empiricism no longer sufficed; precise rules as regards what class of cases had to be treated by massage had not been formulated, contra-indications were not understood, delicate indications were not discerned and the advantages of the procedure were not recognized. We shall now glance at those affections of the muscular system in which massage yields very good results and we shall see that no contradiction exists between what pathological anatomy and clinical medicine teach us. If massage cures, it is easy to explain why and how it does so. For the sake of convenience we shall study: 1 Affections of the fleshy parts of the muscles. 2. Those of the tendinous sheaths.

§ 1.—*Affections of the fleshy part of the muscles.*

These consist in *inflammations*, *contractions* and *atrophy*.

1.—*Inflammation.*—According to the rapidity of the process, myositis may be acute or chronic. And according to the

extent of the lesions, localized or general involving a large part of the body. We shall study these varieties separately, insisting only on those where massage can be used.

*Acute Myositis.*—When in 1851, a house surgeon at one of the hospitals in Paris, Mr. Dionis[1], took as the subject of his inaugural address "The inflammations of the muscular system," the question seemed quite new. Spantaneous myositis had not been much studied, but traumatic myositis had been described by several authors, who had even insisted on its symptoms and diagnosis.

Myositis, unknown to the ancients, was only studied at the end of the last century. In 1880 Plouquet[2] mentioned something about the muscular tissue proper, but these were only theoretical sketches. The author mentioned only spontaneous inflammations, and his work was soon forgotten; in 1850 the question had not progressed any further. Inasmuch as the muscular tissue may become inflamed under the influence of traumatic insults, we are obliged to admit that myositis may also be produced by other causes, either by propagation from a neighboring phlegmasia or under the influence of general affections, which are as yet unknown. We shall not devote any time to the study of spontaneous phlegmasies, which are very rare and generally not treated by massage. On the other hand, massage is quite frequently used in traumatic myositis.

During my stay at Ragaz, I have often had the opportunity of observing acute myositis in inexperienced or too zealous lawn tennis players. The symptoms manifested were generally those of very acute pain in the calf, the patient was confined to the spot, his countenance was extremely anxious, and he required immediate help.

I have observed the same condition in other muscles, particularly in the biceps and even in the rectus abdominis (after a coughing fit). The resulting initial lesion was undoubtedly, at the moment of the catastrophe, the rupture of some muscu-

(1) Dionis des Carrières. De la myosite. Paris, 1851.

(2) Ploucquet. De myositide et neuritide. Tübingen. 1790.

lar fibres. These ruptures took place nearly always after a violent contraction. I have seen some of them produced by a direct blow on the skin; by a sudden turn of the individual, the projecting calf of the left leg being struck by the extremity of his right foot wearing a mountain shoe. We may state that acute myositis treated by massage is nearly always the result of traction upon or traumatic rupture of the fibres of an affected muscle.

As far as we may be led to infer from the symptoms, the lesions are limited. I do not think that in these cases an opportunity has ever presented itself to make a necroscopic examination. A few fibres are torn, a coagulum is formed between them and later on, when nothing is done to prevent it, an exudate more or less circumscribed is formed. The initial symptoms vary very little. They consist in a slight ecchymosis and in local swelling, which is always very sensitive to pressure. In quite recent cases I have on palpation sometimes felt a sort of depression of which the bottom was of a softer consistence than the remaining tissue. This was no doubt a coagulum.

A 39-year-old infantry captain was suffering from traumatic myositis of the prevertebral muscles. His principal symptom was an absolute impossibility of changing his place stooping; after the acute phenomena had subsided, he complained of violent pain on walking; an inflammation of the quadratus lumborum, originating from a rupture, which the patient contracted in suddenly stooping down to pick up a pin, was followed by violent pain, which on the slightest touch radiated downward into the corresponding leg and upward in the shape of intercostal neuralgia. The muscles of the thigh were contracted, the knee was flexed, and could not be extended.

Myositis of the gluteal muscles nearly always produces localized pain, which sometimes occurs spontaneously, always, however, on pressure. Now and then we find contractures of the adjoining muscles serious enough to cause limping or to render walking difficult.

The same phenomena are observed after myositis of the legs. The most striking phenomena immediately after the accident and a little later on, are pain and functional weakness.

Acute myositis of traumatic origin, when left alone, most often terminates in becoming chronic. Local swelling and ecchymotic discolorations disappear, but there always remains behind an area of puffiness, followed by induration, more or less extensive and nearly always very sensitive to pressure. The functional element has partly, but not entirely returned. There are sometimes contractures and more or less pronounced stiffness of the affected region; it is indispensable to prevent these accidents if possible. The best medication during the acute stage is massage. If applied during the first six hours after the accident surprisingly good results are obtained. I have seen people who suffered to such a degree that they dreaded the slightest movement like fire. After one sitting, they were able to walk.

## OBSERVATION VIII.

*Acute Myositis.—Secondary Partial Rupture of one of the Gastronemi Muscles.—Cure After 16 Days.*

M. X., a Swede, 56 years old, of strong constitution, and well built, experiences, while climbing up a steep hill in the mountains, suddenly a violent pain in the muscles of his right calf. He even has the sensation as though something cracked. He has difficulty in getting back to the hotel where he lived, although it was not far from the place where the accident happened. The physician, who was called, declared that it was only the result of overexertion and that by applying some cold compresses all would be over in a few days. I saw him in Paris after the most acute symptoms had subsided. He has difficulty in getting upstairs and leans on a stick. When on a level ground, however, he was able to walk without any too great pain.

On examining the affected region, I find the remains of a rather extended sanguineous ecchymosis. Over the corresponding gastronemius muscle there exist pain and swelling, and these are all the more marked as we approach its lower extremity. At the point of origin of the tendon of Achilles one could even recognize a depression of the size of one's thumb, which was due to a laceration of a certain number of muscular fibres. This depression was in all probabilities filled up by a coagulum.

Massage.—After the fourth séance (one a day) the patient could walk without the help of his stick. On the sixteenth day the swelling had disappeared. No pain on pressure. During the whole treatment the patient continued to walk.

2.—*Chronic myositis.*—Chronic myositis may exist under two conditions; it either follows acute traumatic myositis, which we have just studied, or it is chronic from the start. It had been studied only very imperfectly until it was recognized that its clinical domain was more widespread than had been supposed and that massage was if not a specific, at least one of the best remedies to be employed in this chronic affection. The researches had been conducted in such a way as to consider the affection from but one clinical standpoint. It was only regarded as an affection secondary to rheumatism, having the same general pathological and symptomatic relationship, but which it would be useless to treat separately. Froriep[1] was the first one to point out the existence of chronic myositis from the start, or rather the most constant of its external manifestations; yet he did not believe that the indurations discovered in certain persons and which he called rheumatic (rheumatische Schwielen) were of an inflammatory nature. In one hundred and fifty cases observed by him, he found them absent only twice. The lesion did not always have its seat in the muscular system. Foriep several times found deposits of induration in the skin, in the subcutaneous cellular tissue and even in the periosteum. Lobstein was the first one to declare that this was simply chronic myositis of which rheumatism was the predisposing cause.

Naumann reported three cases of suppurative muscular affections, following rheumatism. He showed rheumatism could give rise to inflammatory affections similar in their symptoms, lesions and termination to those found in other ab-

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(1) Froriep. Ein Beitrag zur Pathologie und Therapie des Rheumatismus. Weimar 1843.

solutely different affections[1]. He adds that Foriep's indurations are rare[2]. In spite of this the opinions of the clinicians were not settled. Thus, in 1867 Oppolzer, taking up Froriep's ideas, again concluded, after having examined a hardened mass of the soleus muscle, that it was a purely rheumatic lesion, having nothing inflammatory about it. He added that this class of indurated areas was very commonly found in muscles[3].

Thus, it has been proven that acute or chronic rheumatism can produce either slowly or rapidly, forming indurations, which may have their seat in the connective tissue, under the skin, under the periocteum, but most often in the depths of the fleshy part of the muscles. Most of the authors whose works we have referred to, have paid very little atttention to the localization proper. It is but a manifestation of a general process, in which the whole organism is concerned, a syndrome of incontestable symptomatic value, which in most cases disappears spontaneously under the treatment of the rheumatism proper. A second school treated the subject from quite a diferent standpoint. Here acute and chronic myositis are the primary, fundamental affections; the original diathetic tendency must be modified in order to obviate a recurrence of the local affections, which are liable to occur on the slightest provocation. These last conditions must be treated first. Mezger's practice promptly led him to analyze these phenomena more minutely than had been done before.

In 1873, Berghman and Helleday, who had observed and treated several chronic muscular inflammations under his direction, insisted on the tendency which these muscular affections have of spreading by continuity, thus reaching the

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(1) Naumann. Pathologische Anatomie, II t.

(2) Ergebnisse und Studien aus d. med. Klinik zu Bonn, Leipzig, 1860.

(3) Oppolzer. Allg. Wien. med. Zeitung, V 27, 1867.

muscles which have not yet become affected, the neighboring articulations and nerves[1]. Looking at it from a practical point of view, these authors have all insisted on the difficulties of treatment presented by massage in cases, where the myositic deposits were situated deep and where they were separated from the skin by a thick layer of adipose tissue. They likewise referred to the peculiarity of the symptoms and the difficulty in diagnosis of certain cases. An example adduced by them demonstrates this better than a long dissertation. For five years a patient complained of stiffness in the nape of the neck, followed by pain radiating into the left arm. A year ago these symptoms became aggravated to such an extent that when Mezger saw the patient the latter was unable to move his head. He was very sensitive to pressure on the nape of the neck, where a slight prominence existed. This made one think of an inflammation of the vertebræ. Several physicians had diagnosticated it as such, and consequently had advised the patient to move his head as little as possible. On examination Mezger found, especially on the left side, a swelling involving the trapezius, splenius and the scaleni muscles; on the same side there existed great tenderness of the brachial plexus on a level with the border of the trapezius. After having excluded the inflammation of the vertebræ, because, in spite of the long duration of the illness, he could not find the least spot on the cervical vertebrac sensitive to pressure, Mezger concluded that he had to deal with a primary affection of the muscles, which, in time, extended to the vertebral ligaments and to the brachial plexus. Consequently he resorted to passive movements and massage, by means of which the patient was cured in a short time.

The work I have just referred to is the first one in which chronic myositis has been regarded from this point of view, and in which treatment was applied not only as a means of in-

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(1) Nord. Med. Archiv, Bd. VI.

vestigation, but also of demonstration. It was soon followed by the excellent works by Helleday[1], Mosengeil[2], Gies[3].

The history which we have just given renders it unnecessary for us to dwell any longer on the etiology of chronic myositis. It is probable that, as most inflammations of the same kind, it may be produced by various causes, but up to the present time, there are only two whose action we understand quite well: 1. Traumatism; in this case the chronic form succeeds the acute one. 2. Rheumatism, which is the most common predisposing cause.

Anatomo-pathologists have stated that in cases of myositis of long duration, the inflammation begins at the internal perimysium; that a proliferation of the connective tissue takes place, and that at length a local sclerosis followed by atrophy of the muscular fasciculi is produced (Helleday).

Chronic myositis may affect all the muscles without exception; Berghman's and Helleday's assertion is correct. "It has a tendency to spread by contiguity, and it is rare for a primary focus to remain stationary both in size and consistency. It is in this way that the subcutaneous cellular tissue the nerves and sometimes all the neighboring articulations can be affected.

The insertions of the muscles in reality constitute a most favorable seat for this affection. It is there that it is most frequently met with, viz., in the nape of the neck, the upper and lower extremities; but it would be erroneous to suppose that isolated deposits do not exist in the fleshy parts and at a distance from the insertions.

Chronic myositis may be found in all parts of the body; in the head, the neck, on the trunk and all the limbs; all de-

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(1) Helleday. Om myositis chronica (rheumatica). Ett bidrag till dess diagnostik och behandling. Nord. med. Arkiv, Band VIII.

(2) Mosengeil. Archiv für klin, Chirurg. Band XIX, Heft 6, Berlin p. 27

(3) Ueber Myositis chronica, Zeitschr. für Chir. Band XI, 1879. p. 161.

posits are not equally well gotten at or susceptible to the same degree of massage. I have seen some in the muscles of the abdominal wall and particularly in the deep parts of the rectus muscle. Some deposits are spontaneously produced. Others again succeed the acute stage and are most often of traumatic origin.

It is difficult to tabulate the symptoms of all these varieties of chronic myositis. Some of them, as we have already said, remain unobserved. The patients would probably never know of their existence if not manifested by their walk through some insults, as exposure to cold, traumatism or acute rheumatic attacks. Treatment by massage has had the advantage in the absence of others, of calling our attention to the real nature of the symptom complex which nobody before had thought of connecting with the muscles. They had referred, however, the symptoms to the digestive apparatus, the nervous system and general state, malnutrition of the body, but no one ever supposed that an apparently mild lesion and one which was neither extensive nor painful could be the cause of such disturbances. I have reference to certain cephalalgias with paroxysms that nosographs have always placed, among migraines (neuralgia), like the writers' cramp, functional weakness of the lower limbs with contractures and pain, which was nearly always attributed to sciatica. Myositic deposits, which the treating or even consulting physicians very seldom thought of, do exist. These latter, if treated by massage, disappear and function is thus restored. However distrustful one may be, it is impossible to suppose that these are only coincidences and that there does not exist any relation of cause and effect between the localized lesion and the removed symptoms[1].

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(1) The only disease which myositis might be confounded with is a more or less circumscribed inflammation of the adipose tissue or rather of its interstitial connective tissue. There is, however, this difference that the latter admits of displacement on the subjacent muscular layers and that, contrary to what takes place in myositic deposits, it is

We shall now review the phenomena observed in various regions.

*Region of the head and neck.—Stiff Neck (torticollis) of muscular origin.*

Torticollis is a very common affection. It is observed in acute and chronic cases. When quite recent, it is easily overcome. The results are less satisfactory, if it is chronic and especially if it is inveterate. I am inclined to believe that congenital torticollis is of inflammatory origin. The cause of it being probably the rupture of a certain number of muscular fibers during parturition. The faulty position of the head is the consequence of the preceding inflammation. If treatment could be employed at an early period, all might be cured; but, as the patient is usually seen only at a later period during childhood or at adult age, only insignificant results are obtained by means of rectification and massage. Recourse must be had to tenotomy. It is often claimed, I do not know why, that torticollis is exclusively produced in affections of the sterno-mastoid muscle. I have just as frequently, and more often, too, seen it in chronic rheumatism, resp. myositis of the trapezius. Torticollis depended almost entirely upon an affec-

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movable to a certain degree, if you seize the inflamed mass between your thumb and forefinger.

En passant, I may also mention that this inflammation of the adipose tissue, chronic from the start, only obscurely known till now and almost always wrongly interpreted, has very frequently been mistaken for a diffuse lipoma. It is, however, to be differentiated from the latter by its sensitiveness on pressure, which is at times quite marked and also by the property, although possessing no direct connection with the muscles, of producing almost the same symptoms as the muscular inflammations, for which it has very frequently been mistaken.

As I intend to publish later on an article on this affection, whose seat of predilection is the lower extremity and the trunk, I shall here not go into any particulars. I will only briefly allude to the fact that these inflammations of the adipose tissue, in contradiction to diffuse diplomata, are like cases of myositis curable by massage. In fact massage seems to be the only means of exercising any influence upon them.

tion of this muscle, so that, after restoring its integrity, the anomaly disappeared.

Myositis, which has its seat in the muscles of the nape of the neck and the neck proper, often radiates out into the muscles of the arm and forearm, and producing improper attitudes depending less upon contractures properly so called, than upon positions involuntarily assumed by the patients in order to relax the muscles and to relieve the pain. More frequently the propagation is communicated, not to the side of the brachial plexus or the shoulder, but to the nerves of the scalp. It is here where the paroxysms and the foci of irritation arise. These phenomena belong to the cephalalgia of muscular origin. In making this apparently paradoxical assertion, that migraine resp. neuralgia of the head is cured by massage, we mean to say that there are headaches in the form of migraine (neuralgia) resulting from chronic myositis of the muscles of the nape of the neck and the neck proper[1].

I have studied this subject at two different periods. My first work[2] embodied thirty-two observations, of which the most were cases of my own, and in which obstinate cephalalgia had been cured by causing the disappearance of the more or less diffuse and old deposits of myositis. Like most of those who have studied massage, I was led to examine more closely than is generally done, into the muscular system, and I have come to the conclusion that it is often a limited myositis which is the cause of the neuralgic pain[3]. These cases deserve a great deal of interest. Interference will lead the masseur to early and prompt cure.

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(1) I have of course here reference only to extra-cranial, secondary cephalalgias.

(2) Norström. Traitement de la migraine par le massage, 1885.

(3) Wretlind, Helleday, Henschen and lately Bumm have all arrived at the same result, and the latter at the meeting on February 13, last year, of the Medical Club of Vienna, reported a communication saying that one often meets hemicrania, the cause of which is simply an inflammation of the muscles of the nape and the cranium and of rheumatic origin. He says that massage is beneficial in these indurations

I can speak with a great deal of confidence and assertion on this subject, because I have often had the opportunity of treating such cases and have obtained surprisingly and permanent good results. In the course of myositis we have seen the disappearance of inflammation and neuralgias whose origin was never suspected. With the disappearance of the muscular inflammation all went well. If you are confronted with a headache, so called rheumatic, with a neuralgia of the head or the forehead or with an ordinary migraine, whose origin is obscure, do not confine your examination to the tender region alone. I have discovered myositic deposits on the margins and on a level with the cranial attachments (less often in the fleshy parts) of the trapezius, splenius, sterno-mastoid, scaleni and even in the temporal muscles. Some might claim that this is a coincidence. But it is by no means so. Pressure on these deposits was often sufficient to produce an attack similar to those previously experienced by the patient. When the suspected deposits were caused to disappear, the paroxysms ceased.

It is impossible to admit the independent existence of these manifestatioins which are so closely related to each other; unluckily the connection is not always visibly traceable.

Does neuralgia of the head, following inflammation of the muscles of the nape or the neck, result from a propagation to the nervous filaments? Is it reflex or vaso-motor? This we are not always able to decide. It is of no importance. The best threapeutic indication is the knowledge of its seat of origin. We do not wish to assert that former methods were not the proper procedures, but in many cases they were useless; simple mas-

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and consequently in attacks of hemicrania. In 17 cases thus treated 8 were cured after a period of from one or three months. All this is to be regarded as a satisfactory result, considering that the author of the report had only for a short time devoted himself to massage in this affection. And it seems to me that he could not have been quite an courant with the manipulations nor with the selection of cases suitable for this treatment. These are things only to be obtained after rather long experience.

sage as we have performed it in affections of the muscular system overcomes everything much more quickly than any other method.

An objection has often been made to the doctrine of cephalalgias of muscular origin. You are in the presence of an alteration which does not give way, which will always preserve its primitive character. You cannot expect a spontaneous healing of the tissues. It is difficult to understand how attacks, irregularly intermittent, can constitute the most important clinical phenomenon of the disease.

We shall try to explain it. The development of chronic muscular inflammations is here as in other regions of the body always very slow. It may take not only months but sometimes even years before they provoke pain. Thanks to this latent and insidious progress, the organism gets, so to speak, gradually accustomed to their presence. These inflammations will produce symptoms only when they have attained a certain degree of development, a period which may considerably vary in different individuals. In order to stir up the inflammation again it is necessary for an occasional exciting cause to be added to the already existing organic one. This new element forms a state of congestion of these myosotic deposits and may be provoked in a direct or reflex way by all the various causes, which we know usually to give rise to migraine, viz.: neuralgia of the head.

In those cases in which the attacks are not well marked or in those, where the patients are always complaining of aching pain, we must infer that the exciting cause almost always of rheumatic or nervous origin, is continually acting.

What I have just mentioned is confirmed by daily observations in our practice. How often does not the patient complain of an increasing pain on pressure, when the crisis was approaching, and how often have I not, at the same time, ascertained an enlargement of the same deposits. In this way we have never failed to predict the onset of a fresh attack.

We shall attempt to show 1) that the cases of cephalalgia

described under our observations are really connected with the phenomena called by certain authors migraine or neuralgia of the head. 2) That the symptoms separately studied are the same in both cases; that they can only present individual differences. 3) That the doctrines set forth up to the present time are sufficient to explain some facts, but by no means all; that there are, from a pathological point of view, hemicranias and not one single hemicrania. 4) That in the most numerous class and perhaps in the one most obscure there are alterations in the neighborhood of the nerves which cause pain. Observations analogous to ours were conducted by various men, until finally this notion was acquired.

To-day there are few nevrologists who do not think it necessary to carefully examine the muscles of the nape of the neck in obstinate neuralgia of the scalp and in typical migraines. I do not mean to say, however, that outside of the febrile state all are of muscular origin; far from it.

In my first treatise I tried to trace the causality existing between the cervical muscular inflammations and the cephalic pain, and to show the possibility of curing all by means of methodical treatment. When it has been proven that a certain remedy is good, this alone will not suffice. The indications remain to be set forth. Massage is not infallible; its application presents chances of failure, too. However, thoroughly convinced we may be, we must never carry our optimism to the extreme. Experience would soon open our eyes and demonstrate to us that if faith was formerly sufficient to transport mountains, it is not always enough to cure.

In a second pamphlet[1] I especially intended to show the indications and contra-indications of massage in cephalalgias and how it must be applied in order to obtain every chance of success. In ten observations published I found:

Obs. I. Resistance of the size of a wallnut in the belly

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(1) Céphalalgie et Massage, Paris, 1890, translated and enlarged in English, New York, 1896.

of the right splenius, puffiness of the scalp in the neighborhood of the point of emergence of the lesser occipital nerve. On the left side, swelling and pain on pressure on a level with the insertions of the trapezius.

Obs. II. On the right side, behind the mastoid apophysis, marked induration corresponding to the muscular insertions. A second induration of the trapezius corresponding to the middle of the nape; pressure on this part provokes pain on the vertex and in the orbit. Swollen and painful glands in the neighborhood. Pain on presssing on the upper cervical and the middle ganglia of the sympathetic nerve.

On the left side, symmetrical indurations corresponding to the insertion of the sterno-cleido-mastoid muscle. Resistant nodule in the substance of one of the scaleni, more marked on a level with its lower insertion. Pain on pressing on the upper and middle cervical ganglia.

Obs. III. On the right, induration in the neighborhood of the cranial attachment of the splenius; resistance in both sterno-cleido-mastoid muscles, a little below their insertion on the mastoid apophysis. Deposit of induration along the attachment of the trapezius to the skull. Tumefaction of its aponeurotic sheath in the region of the occipital protuberance. Sensibility along the supra-orbital nerve in the right frontal region.

Obs. IV. On the right, one part sensitive to pressure behind the mastoid apophysis, another part along the trapezius. On the left, painful swelling on a level with the cranial attachments of the splenius, the trapezius and the temporal muscle.

Obs. V. On the right, induration of the size of an almond, corresponding to the cranial attachment of the splenius. Tumefaction and sensitiveness to pressure corresponding to the upper insertion of the sterno-cleido-mastoid muscle; same swelling in the temporal muscle.

Two of the lympathic ganglia of the neck are swollen and painful. The middle cervical ganglion of the sympathetic nerve is swollen and sensitive to pressure.

On the left, pain on pressure on a level with the upper cervical ganglion, less on the middle one.

Obs. VI. On both sides, induration in the upper border of the trapezius. On the left, induration corresponding to the mastoid insertion of the sterno-cleido-mastoid muscle.

Obs. VII. On the right in the upper part of the trapezius, muscular induration of the size of a hazelnut. There is a sensitive spot along the scalenus medius. Middle cervical ganglion swollen and tender. On the left, in the thickness of the trapezius, small induration of the size of a wallnut (cervical part). Another tumefaction corresponding to the insertion of the sterno-cleido-mastoid muscle, œdema of the skin and of the subcutaneous cellular tissue. Infiltration of the scalp in the occipital region.

Obs. VIII. On the right, pain on a level with the cranial attachments of the muscles of the neck, at the extreme occipital protuberance and at the mastoid apophysis. Both ganglia of the sympathetic nerve, especially the middle one, are enlarged.

On the left, tumefaction and induration on a level with the scalenus medius. Lymphatic ganglia tumefied and sensitive, middle cervical ganglion the same.

Obs. IX. Myositis of almost all the muscles of the neck, especially marked on the outer edge of the cervical part of the trapezius and on the scaleni, the temporal muscles are equally affected.

Obs. X. Behind the mastoid apophysis, painful tumefaction; same lesion on a level with the cranial attachments of the trapezius.

I have already remarked in my "Traité de Massage" and in my first work on the actual subject, that I considered these limited deposits of muscular inflammation as partial cases of chronic myositis, coresponding either to the insertions or to the fleshy part of the muscles. It seems useless to reproduce here the considerations which I then developed in support of this opinion. I have also said that I attributed the disorders in question to rheumatism; that authors had called these

chronic inflammations muscular rheumatism without any more precise designation. It is possible, after what we have seen, to find another unexpected similarity between the cephalalgias which we are studying and migraine. Mr. Thomas, after a minute study of the professed opinions, denies the direct transmission of the neurosis from the person suffering from migraine to his children; on the contrary, he admits without hesitation that these latter inherit predispositions, among which he places rheumatism at the head. This is also the case with the cephalalgias of which we are speaking. Our patients suffer from rheumatism through heredity; in several of them the localizations in the muscles of the nape are neither the first nor the only ones. It has often happened to me that I treated persons for cephalalgia with paroxysms, in whom I had formerly performed massage for affections of the same origin in the muscular parts of the limbs or the trunk, or to learn, when questioning the patient, that he has from time to time suffered from a trace of heredity; they are capricious and may depend on some organic or accidental circumstances[1].

In some cases there may be a complication with neuritis in the nerves of the scalp and especially the forehead (supraorbita nerve) or a swelling with sensitiveness on pressure of one or all the cervical ganglia of the sympathetic nerve. I shall omit here the part which these lesions may play in producing headache. I have discussed that in a special topic which I have written on this subject. At all events these are by no means necessary to provoke the pain.

Generally, the further this affection progresses the more marked will be the persistency of symptoms. I have often had to treat persons who for years regarded cephalalgia as incur-

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(1) Sometimes the rheumatic manifestations in other parts of the body are so little marked that one is inclined to deny their existance; is is only on carrying the investigations further that one almost always ends by discovering some vague, hardly determined pains (latent rheumatism.)

able or, as the popular expression says: "An enemy with whom one is obliged to live."

I consider the following varieties of an unfavorable prognosis:

1. *Very old cases.* One obtains, however, sometimes even in these conditions good results. The patient in observation III. complained of headaches since her eighth year; some time before the treatment she had had up to four attacks a month. After eight weeks of massage I obtained complete success. The observations VIII.' XII., XIII. also relate to very old cases. We must not be disheartened at the beginning, because the affection dates far back, and declare that nothing is to be done. The only thing is to look around.

We may promise amelioration after a long time without even affirming that it will surely be produced. If we see that the attacks become less intense and especially less frequent as the myositis of the nape diminishes, the prognosis is favorable. The restrictions laid at the beginning of the treatment have a further advantage: If the patient submit to a treatment after we have told him that its success is uncertain, it shows that he is decided to go on with it, whatever may be its duration. We shall not meet with impatience and discouragement at the moment when we may hope for something.

2. *General affections of the nervous system.* We have several times tried to employ massage in persons suffering from neurasthenia, in cases where after examination we were able to state the presence of one or several of the inflammatory deposits in question. Sometimes the result was favorable, but unfortunately we soon had a relapse and some months or even weeks after the end of treatment, the patient suffered as much as before. Cases in which the cure persisted are quite exceptional. What has been said about neurasthenia may with greater propriety be applied to hysteria. There is no need of repeating what we have said; in other words, if at the examination we do not find anything in the temples, the scalp, the muscles of the nape and in the outer edge of the trapezius, it

is useless to perform massage; failure would simply be the result. We speak of local massage and not of that one which belongs to a treatment of which the object is the improvement of the general nutrition as that of Weir Mitchell[1].

3. *Cephalalgia due to chlorosis and anæmia.* Some of them are cured by our method, others are not. This state is not necessarily isolated and independent of rheumatism. Nothing prevents the production of limited chronic myositis of the neck. In this case, besides the habitual cephalalgia which corresponds to the general state, there are sometimes attacks, paroxysms, whose disappearance may be caused by treating the local deposits; but here, as in neurasthenia, massage must be considered as an element of medication with multiple factors; it may happen that persons affected with chlorosis have no longer any attacks of migraine and still their condition is unsatisfactory. In my opinion it would be preferable in most cases only to treat these in the last place, after the other symptoms have disappeared and the general state of health is good. Then we have more chance of obtaining success.

4. *Continuous cephalalgias* characterized by pains, shooting or dull, pains during the night as well as the day. They are, especially if chronic, often of central origin and depend on an affection of the brain or the spinal cord, on a general neurosis, an organic disease with permanent compression of one or several nervous filament, etc.; we cannot do anything for them. They may be and very often are of an extra-cranial origin and consequently susceptible to massage.

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(1) Sometimes, although quite exceptionally, it seems as if the muscular inflamations were, so to say, grafted on a concomitant nervous disease to which they bear no relation, except that a nervous crisis may give rise to an attack of headache. In these cases I have also observed that the cure of the cephalalgia exercised the most favorable influence upon the existing neurasthenia or even hysteria, the headache with its debilitating and at the same time irritating influence being a source of irritation of the whole nervous system. We may hope to arrive in such cases at a radical and permanent cure. In the few cases of this kind which I have treated, I have had the pleasure of seeing very good results.

These remarks show that massage occupies the same position as all other therapeutic methods. When a patient, convinced beforehand by the accounts of enthusiastic persons who have been cured, comes to see us and asks us to begin the treatment, let us take care not to entertain these ideas, and before beginning the treatment let us make all inquiries which might be able to enlighten us on the causative affection; let us make a complete semiological study of cephalalgia. It is the only means of proceeding rationally and rarely encountering deceptions.

Patience on the invalid's part is indispensable; one obtains only rarely any improvement before the third or fourth week; I have, however, seen some cases in which quite rapid results were obtained. A young lady, married since a few years, had had a violent headache for three years, in which massage produced an unexpected effect; after the first sitting the pains ceased; they only reappeared once, a fortnight later. A painter suffering very much from anæmia, which I treated five years ago, had had painful caphalalgies for three years. During the last weeks they had been continuous and left him neither by night nor day. After a few days of treatment the improvement was obvious and after three weeks he declared himself cured. As deposits of myositis still existed I insisted on continuing the treatment for a fortnight. After this period everything disappeared and he has had no relapse. Lately I have obtained the same rapid cure in two other cases: a lady, treated at the end of last year, suffered every day for two months; she was cured after three weeks. During that time she only had three very slight attacks. The second patient was a man who had suffered for eight years and who at the approach of spring had longer and more violent attacks. At that time they lasted several weeks every year. At the beginning of the treatment he suffered every day during a fortnight; later on no cephalalgia nor any new attacks for five or six weeks; up to last September no relapse.

Besides these facts I might adduce others, more rare in-

deed, in which not the slightest improvement was obtained for four or five weeks. In these cases the affection had generally lasted for a long time. On the other hand, I have seen very old ones (of thirty or forty years' duration), in which, contrary to all supposition, there was evident amelioration after a treatment of only a fortnight. (See Obs. XII.)

From what has preceded we may conclude: 1) That we very often meet with chronic myositis in the temples, the upper part of the neck and the nape.

2) These lesions are followed by cephalalgies of various intensities, many of which present attacks in all points similar to those which the patients and physicians themselves generally call migraine.

3) By massage we nearly always succeed in curing chronic myositis and at the same time the cephalalgia.

We have mentioned nothing about *cephalalgia due to growth,* about which an interesting memorial was published by Blache a few years ago. Authors do not agree on its origin and nature. Ollivier believes that in many cases a hereditary nervous substratum exists, that the headache corresponding to the growth is a precocious hysteriform manifestation. My personal experience does not allow me to express any definite opinion; it is, however, probable that all cephalalgias which come on at the end of childhood have not the same cause; that some of them are very like those which we have described. In some cases I have found chronic inflammation of the muscles of the neck and I have succeeded in curing or improving the patient's state by making them disappear; in others I have obtained no result, although local changes in the consistency caused me to expect a better result. All this shows that varieties exist among cephalalgias due to growth. Those in which the treatment was ineffectual, and these are the less numerous ones, probably belonged to the cephalalgias which Mr. Oliver harmonizes with general neurosis.

After the cure one may still expect relapses. This is fortuneately not the rule, but the exception. In one hundred and

forty-two cases, cured or ameliorated, I have noticed it only thirty-one times. Sometimes the relapse comes on after some months; sometimes, though more rarely, only after several years[1]. The symptoms are generally less decided and less painful than in the first attack; the reason of this is that the deposits are less numerous than at the beginning and that they are only partially reproduced. The duration of the treatment is shorter than the first time (a fortnight or three weeks). In but a few patients was I obliged to resort to it twice; at the end I overcome all.

### OBSERVATION IX.

*Myositis of the Scaleni.—Cervical Ganglia of the Sympathetic Nerve Painful.—Several Lymphatic Ganglia Swollen.—Cephalalgia with Paroxysms for Ten Years.—Massage.—Cure.*

Miss T., 24 years old, Italian, came to consult me for the first time in December, 1889. She was pale, anaemic and seemed to suffer a great deal. The pains always began in the right lateral half of the neck, and soon extended up behind the ear to the vertex. They are not violent at the beginning, but before long they become extremely painful; then the head is bent towards the affected side. This position of the head is retained as long as the crisis lasts—i. e., from 24 to 48 hours. When the attack is over, the patient feels very much prostrated from the pain and want of sleep. The pain is acute, shooting; the patient feels as if she were being pricked with needles in the side of the neck. Lately, she had two crises a week. From year to year the pains have increased in intensity. Emotions, changes in the weather exert a considerable influence on the attacks; a cold draught is enough to provoke one. She never rides in an open carriage, except in hot weather. On examination of the neck, I find in its right half several swollen lymphatic ganglia, painful on pressure. The scalenus medius on the same side is the seat of a chronic myositis; in most of its extent violent plain on pressure. Massage begun at once produced a complete cure after two months, as the following letter, which the patient wrote to me from her home May 23, 1890, shows:

"Ten years ago—I was then 14 years old—I began to feel from time to time some pains on the right side of the neck, which were diagnosticated by the physicians as neuralgia. At that time the attacks occurred about two or three times a year, but they became more frequent and more and more painful from year to year, and the diseased part became more indurated after each crisis. In Rome, my physician

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(1) The tendency seems to me to be less marked in elderly persons. It is also worth noticing that we must not rely upon the action of nature and let even a small focus of the muscular inflammation subsist which might constiute the germ for later development.

attributed these neuralgias to the climate and for a long time advised quinine and other febrifuges. As these yielded no results, I received for several weeks local injections of phenic acid, but all these modes of treatment had no effect. In Paris I consulted other doctors who stated the presence of the glands of the neck, declared that I was scrofulous and attributed the pains to the lymphatic state of the blood. With regard to this, I was sent to Kreuznach (Germany), for two seasons, but the treatment relieved me only momentarily. Last year, my affection having grown much worse, I had occasion to consult Dr. Landovsky, of Paris, who earnestly advised me to try a cure with Dr. Norström. I followed his treatment for six weeks. During the first sittings I suffered a great deal and could hardly tolerate the pressure of the finger on the diseased part; but after a fortnight I began to feel real progress, and long before the end of the treatment I did not experience the slightest painful sensation. It is now four months since treatment was stopped, and I do not feel the slightest trace of the pains which had made me suffer so much for ten long years."

To this I may add that at the moment when she stopped the treatment, there was no trace left of the muscular inflammation. The tumefaction of the ganglia, too, produced by the myositis in the neighborhood was almost gone.

I was told by her father, who came to see me in the spring of 1893, that her condition remained the same.

## OBSERVATION X.

*Very Voluminous and Hard Deposits of Myositis Behind the Right Ear; on the Left, Smaller and Softer Ones.—Tumefaction and Sensitiveness Along the Attachment of All the Muscles to the Cranium.—Both Upper Ganglia of the Sympathetic Nerve on the Right Swollen and Tender on Pressure.—Case of Very Long Standing and Great Intensity of Pain.*

Mrs. R., 55 years of age, married to an ex-president of the Tribunal de Commerce, and belonging to a family of note in Paris, is suffering from headaches since her fifteenth year. Besides the disease, she complains of pains, not well defined, which she experiences from time to time throughout the whole body, and which she attributes to rheumatism. Up to the age of 50, corresponding to the time when she reached the menopause, the pains had been relatively tolerable; they only came on once a week, or at the most, every four or five days. It seemed to her as though these pains had a tendency to get more frequent as she approached the period which we have just spoken of. After that period, instead of seeing her disease get better, as the physicians had told her, it was not long before she suffered more. The pains not only increased in intensity, but the attacks became so frequent that almost no day passed by without her suffering, and she was obliged to stay in bed; sometimes the pains did not even leave her during the night, and prevented her from sleeping. As to social life, she could not participate in it, and if by chance she was obliged to do it and

accepted an invitation, she paid dearly for it the following day by a fearful attack. She suffered as much in summer as in winter. Except for great fatigue and exposure to cold winds or draughts on the neck, she has not observed that any particular circumstance produced the attack. The pain, which was most of the time of an acute and shooting character, almost always began in the right side of the nape of the neck and radiated forward to the forehead, not involving the eye. After one or two hours, it passed to the other side, but did not assume such intenseness. It rarely remained unilateral. At the same time the patient complained of a pain in the temporal region; she felt as if her head was being pressed in a vise. The pain was liable to come on at any time of the day, but she most often felt the headache on awakening. It would increase, and only very late, at about 4 or 5 o'clock, would it begin to diminish; so that in the evening she was generally rid of it; but sometimes, as I have already said, it continued during the night. This generally happened when the attack began at a late hour of the day. The patient felt relieved when she instinctively rubbed the nape. Of the employed medicaments, as quinine, aconitine and antipyrine, only the two last ones produced any relief; but as she got accustomed to them after a few months, they too were without any effect. Three years ago she also tried electricity (galvanization) for three months without any result. On examination, March, 1892, I found a deposit of myositis behind the right ear; it was voluminous and hard, and corresponded to the upper attachment of the sterno-cleido-mastoid muscle; below, it was very marked. It is sensitive to pressure; the patient feels violent pain in the region of the forehead, similar to that she experienced at the moment of the attacks. There is another deposit in the trapezius of the same side, at about two fingers' breadth from its attachment to the cranium. It is of the size of a small almond, and occupies an almost horizontal diameter. On pressing on it, the patient experiences acute pain on the top of the head. Tumefaction and pain on pressure along the attachments of all the muscles to the cranium. The same applies to the upper attachment of the temporal muscles, especially in front. Both upper ganglia, especially the first one, of the sympathetic nerve of the neck are swollen and sensitive to the touch.

## OBSERVATION XI.

*Continuous, Persisting Dull Pain.—Scaleni and Trapezius Affected.—The Deposits of Myositis in a Very Moderately Advanced Stage.—Cure After Three Weeks of Massage.*

In September, 1893, a Swiss lady, Mrs. B—n, whom I had formerly successfully treated for migraine, came to see me in Ragatz with her daughter, who was 14 years old and who was subject to daily headaches for two years. On examination I found muscular inflammations of the nape, but not in an advanced stage. I told them that I was almost sure to rid her of her pains, but I added that I had not much hope of obtaining a definite result in the short time (three weeks) which remained, before I was obliged to leave Ragatz for Paris. At her solicitation the treatment was, nevertheless, begun.

The patient, being very studious, the headaches had been a great obstacle to her education, and prevented her from thinking freely. Besides this, she was always in a downcast mood. The pain, of a dull character, almost never left her except in the night, or, at least, it did not prevent her from sleeping. It came on without the slightest cause, involved the whole head to the eyes, and was attended with almost continual nausea. It was always aggravated before the menstrual period.

The scaleni and trapezius are affected, especially on the left side. In the trapezius of this latter side, there is a rather extensive myositis, situated near the median line. On the right side, the myositis is smaller; it has its seat higher up than the left one, at a finger's breadth from the attachment to the skull. We have here to do not with an induration properly so called, but with a resistance with ill defined outlines, the diseased tissue being gradually transformed into a healthy one. After three weeks of massage a little portion of the first named inflammatory deposit remained, and yet the patient declares not having suffered for several days. Nothing left of the other tumefactions. In a letter which I received from her mother at the end of last March, she writes that the pains have deserted her daughter, and that her character has also quite changed. Where formerly she was downhearted and sullen, she is now lively and bright. What demonstrates above all the success, says the mother, is that one of her teachers declared to me yesterday that she is always the first in her class.

Everything favors the belief—thanks to the influence of nature and her youth—the myositic remnant that I have mentioned has disappeared.

## OBSERVATION XII.

*Deeply Rooted Case.—The Symptoms Presenting a Great Intensity.—Most of the Muscles of the Neck Affected.—On the Left the Deposits Presenting More a Tumefaction than a Real Induration.—Persistent Cure.*

M. B.—n, auctioneer, 45 years old, had suffered from headaches for 35 years. The pains which were of a less violent character until seven years ago, have since that period increased in intensity. They are especially brought on by damp and cold weather. The patient suffers less during the summer. A cold draught is sufficient to provoke the attacks; physical fatigues and especially sitting up late in the evening produce the same result. It is the same with moral fatigues and with all work requiring an intense application of mind. Thus he has been obliged to give up his favorite pleasure of playing cards for several years. The attack most often begins during the day and sometimes continues during the night. He is sometimes awakened in the middle of the night by great pains, which deprive him of sleep. The head is so sensitive that the patient, fearing to rest it on the pillow, stays up during the night, walking about in his room; he only retires when quite exhausted from fatigue. The attack lasts from twelve to thirty-six hours; the latter only rarely. The pain, which is always acute, sometimes becomes so violent that the patient, as he says, thinks

his head is going to split. The right side is affected more often, but sometimes the pain passes to the left after a few hours. It begins on a level with the right temple and rapidly extends towards the forehead, the vertex and the nape; from time to time, especially when he is directly exposed to the wind, it begins in the frontal region. The face, and particularly the eyes, become red; the veins become dilated and the face is from time to time covered by cold perspiration. Heat applied directly on the head relieves him somewhat. Antipyrine, which at the beginning relieved him, has for some time not produced any more effect. He derived some advantage from a stay at Aix-les-Bains and Dax. Since last February he takes from time to time a preparation of morphine.

On the right side I find voluminous induration in the sterno-cleido-mastoid muscle, near its upper attachment. There is resistance of the size of a small almond in the lower part of the scalenus anticus. A very hard cord passes obliquely through the trapezius as far as its attachment to the cranium. The upper attachment of the deltoid muscle is swollen and sensitive to pressure, especially in front. The supra-orbital nerve is very sensitive to touch towards the edge of the orbit, where it seems somewhat thickened and appears to be the seat of a perineuritis. The first ganglion of the sympathetic nerve is swollen and painful to the touch. On the left side tumefaction of the trapezius and splenius at their attachments to the cranium.

Treatment by massage was begun May 12, 1894. I was obliged to interrupt the cure because of my going to Ragatz, in the latter part of June. During the following summer he had only two slight attacks. When at the end of next November, in consequence of the cold weather, he again experienced some pain in the frontal and temporal regions, he came to see me again, requesting me to continue and finish the treatment. After five weeks of massage no more muscular inflammation; the supra-orbital nerve was no longer sensitive to touch.

Since that time up to the early days of last October, when I saw the patient for the last time, his state of health had been most satisfactory. The exciting causes had, however, not been absent. Among these I shall mention above all draughts to which he is so often exposed in the locality where he superintends the sale of horses in Paris (Tattersall). He also had influenza last spring, but whereas in former years he had suffered martyrdom, this time he only felt a tendency to pain in the head, as he says. Morevover he is again able to enjoy a game of cards without feeling the slightest after affects.

Before I finish this chapter I will say a word about cephalalgia produced by *congestion*.

It would never have occurred to me to apply massage in cerebral congestion if my attention had not been brought to it by chance.

In the spring of 1892, Prince S—r, from Vienna, sent to me by Prof. Billroth, came to be treated for a migraine from

which he had suffered since several years. The examination of the invalid showed that he was affected at the same time with symptoms of cerebral congestion which he asked me to treat. I answered him that massotherapeutics could not have any effect on this last affection and I treated only the migraine. He was not long before being cured and when he came back to see me the following year, he told me, to my great surprise, that the congestive attacks had also disappeared, although he had ceased to use the medication which had formerly been prescribed for him.

I at first regarded this as simply a coincidence and I wished to repeat the experiment before announcing this.

The first patient who came under my observation was a lady sixty-two years old, who had reached the age of the menopause seven years previous. She complained of a feeling of heaviness in the head, tingling in the ears, weakness in the legs, etc. There were at the same time signs of myositis in the nape. Massage soon affected a disappearance of all these symptoms and the patient, seen again fourteen months later, had not had any relapse of her disease. Another person of about the same age and presenting the same symptoms, was treated and cured in the same manner. The symptoms had not reappeared for twelve months after the end of the treatment.

A Protestant pastor, aged fifty-four, with his face flushed, the neck big and apoplectic, with a tendency to sleep after meals, giddiness, etc., came to see me to be relieved of all these congestive troubles.

I began massage of the muscular inflammations of the neck and obtained, after a relatively short time, such an amelioration that he felt as if he had grown twenty years younger and was enabled to devote himself to his study and work, which his disease had prevented him from doing for several years.

I have treated seven other invalids since with the same success.

It is interesting to note that in all these cases the myositis had been diagnosticated as if there existed a relation of cause and effect between the intra-cranial and the extra-cranial congestion. The presence of other rheumatic manifestations and the constant presence of congestive signs rendered the idea of a simple coincidence illogical.

This clearly proves the existence of congestive cephalalgias caused by muscular inflammations of the neck and which are apt to be cured by massage.

Those who would like to obtain more precise information on the treatment in question, will find it in my monograph already cited.

*Region of the Trunk.*—Myositis of the trunk, like that of the neck and head, gives rise to different, not well defined processes. A strain in the back is sometimes spoken of as an acute affection of traumatic origin, characterized by a sudden, continuous pain, sometimes so exaggerated on motion that the patient is obliged to remain more or less quiet. Here again we have a laceration or rupture of some muscular fibres, followed by an inflammatory reaction. These are excellent cases for massage. In two or three sittings, sometimes in only one, the masseur is able to overcome affections which seemed intractable. It was in a case of this kind, communicated to the Medical Society in Lyon, in 1837, that Martin[1] was able to achieve wonderful results and revenge himself on one of his colleagues who was skeptically inclined towards massage.

*Lumbago* is a painful affection which, as the name implies, has its seat in the lumbar region or loins.

In its acute form it constitutes the most frequent disease; it is then either of rheumatic or only a pain due to cold. The terminology needs to be definitely settled; strain in the back and traumatism, lumbago and rheumatism are indifferently spoken of. In all probability the cause varies in the different cases. Massage yields almost as good results in this affection

(1) Martin. De Lyon, Compte rendu des travaux de la Société de médecine de Lyon, 1837.

as in the troubles we have just described. As regards the chronic form it is one of those diseases we have often to deal with. Sometimes it is an acute myositis; in some cases only an acute muscular rheumatism left to itself or treated in a wrong way, very often a myositis assuming a chronic character from the beginning. Most pathologists classify lumbago among the different forms of rheumatism. I see no objection to this and I repeat what I have said in regard to all inflammations of a similar nature, namely, that rheumatism is the predisposing cause.

Furthermore, a single expression seems to indicate numerous clinical analogies; the contrary, however, is true. I shall not discuss the acute form, but chiefly devote myself to the chronic form.

In a great number of cases which we had to treat, we had to deal with myositis whose deposits were often very numerous. These deposits may be discovered in the prevertebral muscles, in the sacro-lumbar muscles, and in the great dorsal muscle. It is useless to hope for a rapid cure. Patience and confidence are indispensable in order to obtain good results. We must endeavor to find the deposits by careful palpation.

In a second exploration we sometimes find deposits which had escaped our notice during the first one. Then we apply massage until they disappear; as long as an area of loss of elasticity or a prominence or resistance remains, we must continue laborously, because the pain persists. Even if the latter has then momentarily relieved, it may return with greater intensity.

### OBSERVATION XIII.

*Disseminated Myositis of the Back.—Myositis of Various Consistence.—General Weakness.—Massage.—Cure.*

M. S. L., 34 years old, complains for many years of pains in his back, particularly the right side. Starting in the upper part of it, the pain has slowly extended to several parts which did not seem to be affected at the beginning. Electricity, warm baths, vesicatories, hydrotherapy. In spite of these the pains became so violent that they often compelled the patient to remain absolutely quiet for weeks. In the intervals he walked with his head constantly bent forward and

carefully avoiding everything that was able to excite even the slightest tension of the affected muscles. He experienced sensations as though his chest was being constricted by a vise. Obliged to assume always the same position in the bed, he could not sleep. His general state of health declined. Has been obliged to give up his position as accountant. Last year he tried gymnastics, but without any success.

Different diagnoses were made: rheumatism, neuralgia, spinal irritation. No sensitive point was discovered along the vertebrae on pressure or touch. The long muscles of the right side of the back appear even to the eye more bulky than normal. The increase of volume ceases in the upper part of the scapular region, where the muscles seem to be normal. In exerting more powerful pressure one discovers some deposits of muscular inflammation in the lower part of the long muscles of the back. The size of these deposits varies from that of a large pea to that of a walnut; they present all stages of development of myositis from puffiness to that of real sclerosis.

1880. Massage.—Frictions of the belly of the muscle. Petrissage of the indurations; marked relief after about 40 sittings; movements not very painful; the patient can work without too much difficulty.

Sleeps better; he can rest on the parts which were formerly the most painful; general state of health better.

After a little more than 2 months the muscles have regained their normal state; the deposits have almost entirely disappeared. Sleeps well, can resume his occupation again.

No recurrence after 10 months.

There are other forms of myositis in the trunk which are not spoken of and which, however, are nevertheless no less painful than those which I have just mentioned. They have their seat in the anterior wall of the abdomen. These may produce gastralgia, enteralgia and cystalgia. I have observed a very obstinate case after a myositis of the lower part of the abdominal wall. The patient had dysuria, very frequent micturition and constant vesical pain. This fact seems to confirm an opinion supported by Mr. Hartman[1], according to whom cystalgia is always of a reflex nature. Fortunately, in my patient the indurated nodules were superficial and easy to get at. After six weeks of massage he was almost cured; obliged to interrupt his treatment this moment, he was able to attend to his business as before. I saw him a few months afterwards; the improvement persisted and was even more decided. Of all cases of myositis affecting the trunk, the most annoying

(1) Hartman. Revue de chirurgie, Paris, 1889, No. 40.

ones are those of the abdominal wall. They give rise to difficulties in the diagnosis and they are very difficult to overcome; their treatment is painful, the deposits move under your finger, because the mass of intestines is continually shifting. We can only obtain a relative fixation of the parts by telling the patient to hold his breath as long as possible.

*Upper Extremity.—Myositis of the Shoulder and the Arm.*

Chronic myositis is very frequent in the arm. It is found in the deltoid muscle and almost always in the neighborhood of its insertion into the humerus, with a tendency for the pain to radiate down the arm to the hand.[1] Besides this, I have found it affecting all muscles of the arm except the brachial biceps. On the forearm myositis affects much more frequently the muscles that are inserted into the condylus ext. (extensors and supinator longus) than those inserted into condylus int. (flexors and pronator longus).

OBSERVATION XIV.

*Myositis of the Right Deltoid.—Massage.—Cure.*

Mrs. L., 51 years old. Began to feel 3 years ago pains in the left side as well as in the corresponding shoulder. The pain, generally of a dull character, sometimes became very violent; it made itself particularly conspicuous in damp and foggy weather. At these times it assumes often a neuralgic character and radiates into the whole anterior surface of the arm, sometimes even into the hand. The patient suffers less in the summer. For more than a year she no longer suffers on

(1) Sometimes I have observed how myositis of the deltoid gave rise to symptoms in distant parts of the arm the same as muscular inflammations in the neck do in the forehead. But here they assume more the character of parasthenia or something like a partial paralysis. According to the greater or less proximity of the muscular inflammation one or other of the nerves inervating the arm and the hand is affected. How many times have I not met with persons, who complained of numbness, formication, pricking sensations, etc., in the hand, when the real cause was but a muscular inflammation of the deltoid. I have treated some cases of this kind, but I remember particularly a lady, who consulted me some years ago, and whose only complaint was a sensation of cold in one of her hands (particularly after having washed it), complicated with a difficulty to approach her thumb to her other fingers. All disappeared after various local treatments had in vain been applied by others. The muscular inflammation in question was gone.

the left side, but the pain in the shoulder and the arm has steadily been increasing, so that lately she has not been able to do her work. She is a doorkeeper.

She has been treated for gout, etc. Has taken enough medicines to get dyspepsia, but not enough to get cured. Sulfur baths. Frictions with terebinthine camphorated oil. She can lift her arm horizontally but with difficulty and as by jerks; can reach the posterior border of the ear with the tips of her fingers, but cannot get further. Is unable to comb her hair. It is possible to impart to the arm passive movements of normal extent, but when we approach the physiological limit, she experiences violent pain in the shoulder. The arm on the same side is not so strong and gets fatigued very easily.

Muscular induration in the lower two-thirds of the anterior border of the right deltoid region in its entire thickness and in a breadth of 2½ cent.

When one presses on this point, the patient feels violent pain radiating along the median nerve to the tip of the fingers. Slight atrophy of the muscle, nothing abnormal in the scapulo-humeral articulation, nor in the other muscles of the axillary region.

Massage.—After 2 months the patient can use her arm quite well and does not feel the slightest pain.

## OBSERVATION XV.

*Two Deposits of Myositis in the Deltoid Muscle on the Right Side.—Slight Atrophy.—Massage.—Cure.*

M. S—n, 25 years, native of Germany. Very robust and quite healthy looking person. Experienced at the age of 18 pains in the upper part of the right arm, sufficiently severe to hinder the free movement of the arm. He suffered particularly after great exertion; also after having written for a long while, and after turning, swimming, etc. The physician he consulted made the diagnosis of rheumatism, and treated him for 3 months with electricity, without any result. Up to spring, 1893, alternately better and worse. But at this time the pains became so violent and, at the same time, so persistent, that he was obliged, for weeks, to carry his arm in a sling. After the subsidence of these morbid symptoms, he submitted, for four weeks, to treatment by electricity, massage and saline baths. Improvement, but unfortunately only transitory. For as early as autumn, 1894, the pains reappeared and with such violence as they had never done before. Not even during the night was the patient free from them. In this state did I find the patient the summer previous, when he came to see me in Ragatz. He had spent the last winter in the south of Europe, and a well known surgeon had advised him to undergo an operation, in the belief that there had formed in the muscle a scar, after rupture of some of its muscular fibers.

The pains were of dull character, and not always of the same intensity. They were particularly violent at the approach of cold and damp weather, after long walks, after writing for a considerable time and after lying for some time on his right arm. The pains were always confined to the same spot and did not radiate along the arm. He also complained of weakness in his arm, which was steadily increasing,

so that finally he could only move it with difficulty. He was unable to lift heavy weights. He was even unable to raise light weights, such as a glass of wine. Penholders and similar light materials dropped out of his hand with ease. On account of this affection he was pronounced unfit for service by the military authorities and was exempt from military service. On inspection no external difference could be detected between the two shoulders. On palpation the right shoulder feels a little flabby. In the lower part of the shoulder, not far from the inferior insertion of the deltoid muscle, and seated rather deeply in its substance there are two different deposits of myositis. The larger one of these is stituated not far from the external border of the muscle (it is of the size of a Spanish nut), whereas the other one, smaller and flatter, is located a little lower down. Both are in the last stage of the disease; that is to say, in the stage of induration; painful only on strong pressure.

As I had only 3 weeks at my disposal before leaving Ragatz, I was obliged to resort to 2 sittings a day (during the last 5 days up to 3 sittings), and to work very energetically. Already after one week the patient felt better and could pass the night without being disturbed by the pain. When I left him, the patient was quite well and had not felt any pain for about a week. He also maintained that the former strength of his arm had come back. Last summer I received word from him, learning with pleasure that his condition left nothing to be desired.

Among the diseases of the nervous system, we had placed a certain number of morbid conditions, which presented as a common characteristic the functional weakness which they produce.

It is probable that these anomalies have been produced at all times in all movements demanding rather complicated motor associations.

It is only since 1830 that these affections have been methodically studied and that an attempt has been made to trace their origin.

Writing alone was mentioned as a cause. It seemed as if the functional disturbance in question was only produced in this act; if this had been the case, it would have been a serious argument in favor of the central origin of the disease; for even if we limit the work to what is strictly nceessary and regard writing as a mechanical, almost automatic act, it nevertheless requires a more active intervention on the part of the sensorium than many other acts do which require delicate movements.

*Writer's Cramp and Chronic Myositis.*—Numerous observations show that spasmodic or paralytic affections are not exclusively produced in writing, and that these affections are capable of seriously impeding several acts which require the simultaneous action of several muscles of the hand, the forearm, the arm and the shoulder.

Professional dyskinesies similar to those which I have mentioned have been described in pianists, violinists, metal workers who have to do rather delicate work; jewellers, tinsmiths, mechanics, zinc workers; in telegraphists, photographers, cigar makers, milkers[1].

An attempt has been made to collect all under the same name and to outline a clinical sketch which would apply to one disease. Authors have successively called it graphospasm, mogigraphia, anapeiratic paralysis, professional dyskenesies, contraction through functional abuse, etc. None of these expressions has found much use and now as formerly it is most often termed "writer's cramp." The term seems to indicate that a necessary contraction exists and that the affection is only met with in writers; this is, however, as I have already said, not the case.

The classification of the symptoms has been more fortunate. Duchenne, of Boulogne, whose ideas are still accepted nearly everywhere in France, admits a spasmodic and a paralytic form[2]. Benedikt adds a third one, the trembling form.

From the moment we were agreed on the symptomatology, the object of all discussions and researches was to find out: 1) The nature and origin of the disease. 2) Its treatment.

It is still Duchenne who is at the head of one of the schools as regards the origin of the disease. The loss of coordination of the movements predominates the clinical sketch; as Charles Bell, Heyfelder and many others had already remarked, no anomaly exists except in certain acts. Persons

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(1) See Layet. Hygiéne des professions et des industries, Paris, 1875.

(2) Duchenne. Electrisation localisée.

affected with the disease in question can use both their hands in violent and many delicate exercises, too, without the slightest inconvenience; to those who observe them at this moment the integrity and co-ordination of the nervous and the muscular system do not leave any doubt. The affection only becomes noticeable in a complicated act which requires the activity of numerous muscles of unequal importance and size. It is on this account that Duchenne regards the myogenic origin of the spasm as improbable: the preservation of the movements without complex associations and the preservation of the electric contractibility seem to show in his opinion, that the muscles have nothing to do with it. This author has seen the affection produced on both sides successively. Persons who could not write with the right hand any more on account of contraction of the pronator radii teres and of the muscles of the radial region, succeded in writing fairly well with the left hand; after some time the left pronator radii teres became affected by spasmodic contraction. Duchenne admitted that a centre of co-ordination of the movements of the hand exists in the brain. Professional dyskinesies corresponded to temporary or permanent changes in the centre.

It is going too far to call an affection which is so distinctly limited as the writer's cramp a disease of the nervous system and of central origin. However, as this afforded an easy explanation and no other was at hand, it was accepted. They even went further than Duchenne, when they desired to locate the centre admitted by him and indicate its peculiar qualities. Erb does not deny it[1], but he describes a mechanism different from the one given by Duchenne. According to the former the voluntary motor impressions pass through definite regions of the gray substance which assume, in consequence of habit, a sort of normal coefficient of conduction; if the excitability of these regions is increased, the impressions pass too easily and contractions are thus produced. If the excita-

(1) Erb in Ziemssen's Handbuch d. Allg. und spec. Pathologie und Therapie, Band XII.

bility is diminished, fatigue, slight palsy and spasms of the antagonists are the result. According to Erbenmeyer the existence of centres of motor co-ordination is beyond a doubt.

We have no intention to pass in review all suppositions and all deductions that have been based on this principal hypothesis. Whether the origin of all this was placed in the brain, the bulb or in the cervical enlargement of the spinal marrow (medulla oblongata), it was of little importance; the writer's cramp remained an affection of the central nervous system and with this knowledge therapeutics had to find its way.

From 1873 Professor Rossander, of Stockholm, followed the path opened up by Poore[1]. Without disregarding the nervous system entirely, Rossander admitted that the secondary changes must be taken into account, and that the original process must be discovered through careful observations of these changes rather than through previous observations. These secondary changes may even occupy a place of first importance. "We may perhaps find that like large rivers, which originate from insignificant sources, the ultimate train of symptoms, which leads to the gray substance, has its origin in a small muscle of the hand which is of but secondary utility." Probably the same lesion—always of a paretic nature in his opinion—is not found in all cases, because all the muscles of the hand take part, more or less, in the complicated act which constitutes writing.

Neurologists themselves had passed their opinion with a great deal of reserve. Erb, for instance, admits that lesions of the muscles of the hand, even of the forearm, might in some cases have produced dyskinesia.

The faradic current had utterly failed in Duchenne's hands. Berger and Eulenburg had tried galvanism without being more successful. They even attempted to invent prothetic apparatuses, which would permit of writing[2]. In 1881

(1) Poore. An analysis of 75 cases of writer's cramp and impaired writing power. Medic. chirurgical Transactions, t. LXI.

(2) See Duchenne, loco cit.

Zuber declared that mechanical treatment was real pleasantry, and he knew of no more effective method. He said: "The first requirement is to secure perfect rest for the overworked hand. If the circumstances of the patient allow it, he ought to stop working. If this be not possible, he must learn how to write with the left hand, and exercising a little care, he may then avoid a secondary affection of this hand." The procedures were not numerous enough to cause any embarassment as regards their choice; if a dyskinesy prevents a person from writing, let him remain quiet! It does not allow him to follow his profession any longer. If he is a pianist, a watchmaker, a jeweller, etc., he must change his occupation. The therapeutics were summed up in this. It is easy to understand how any medication, which had yielded the least success, was received with favor, almost with enthusiasm. Zuber had spoken of frictions, of massage, either alone or combined with medicinal injections; of Cederschjöld's procedure, which consisted in mechanical irritation of the nervous trunks by means of the fingers (Nervenschütterung); all these means had yielded some success. Rossander's procedure is perhaps not quite as conclusive, because at the same time that he performed massage he used subcutaneous injections of strychnine.

Writer's cramp was no longer considered as an exclusively nervous affection. More importance was attached to the muscles. From the moment this notion had gained ground, the time for the application of topic and rational therapeutics was at hand. One of Dr. Romain Vigouroux' articles drew the attention to a method, which was better understood and also more complete than those which had been mentioned before. In his first communication on this subject he mentioned two of Charcot's patients, who had been treated by a schoolmaster in Frankfort, Mr. Wolff, and who had been cured[1]. This work was followed almost at once by an article in which Dr. E.

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(1) Romain Vigouroux. Progrès médical, 1862, No. 3.

Schott claimed priority. He declared that the procedure in use was employed by his brother, Augustin Schott, and himself, and that Wolff had learned it from them. It comprised gymnastics and massage. The gymnastics consist of: 1) Passive movements; 2) Active movements, which a second person resists. The massage acts: 1) On the nerves; 2) On the muscles.

We have seen how one had successively arrived from the purely empirical and clinical study of the writer's cramp and painful movements of similar affections at different conceptions on the pathogeny; how only lately notice was taken of the muscular system which was considered as of secondary importance so long as the affection was regarded to be of central origin; we have likewise seen how empiricism had prompted medications which had cured in a sufficient number of cases to attract attention.

I shall now show how I arrived at a more precise idea and appreciation of the matter; how I was induced to compare affections observed in the realm of sensation to those observed in the realm of motion, and how I was led to establish a sort of analogy between writer's cramp and the painful affections of the head.

My attention was attracted by a phenomenon which I at first observed on myself. To massage deposits of real muscular indurations requires constant exercise and forced motion of the muscles of the thenar eminence. Masseurs who are novices get soon very tired. In order to acquire sufficient strength for long sittings it requires a great deal of practice. Many years ago, when the muscles of my thumb were far from being as developed as they are at present, fatigue manifested itself by phenomena, which reminded me very much of those of the writer's cramp. When I desired to write after a prolonged séance, I was sure of being prevented from it by a trembling of the thumb and the forefinger very much like that which Benedikt connected with the tremulent form of cramps. At the same time I had swelling and pain on a level with the thenar emi-

nence and in the course of the long flexor of the thumb. When on the other hand, I massaged with the whole hand, I felt nothing like it, no matter how long the séance lasted. The trembling lasted a quarter of an hour or even longer and then disappeared. Later on, when I got used to it, I did no longer experience anything like this.

An exaggerated muscular exercise can then produce temporary spasmodic agraphy; this cramp succeeds an irritative process of the muscles that are called into play. It remains for us to find out whether something similar is not produced in apparently spontaneous cases and whether instead of an accidental tumefaction, accompanied by pain, there are not in the course of one or several muscles chronic myositic deposits which behave like those which we have seen in the nape and in the neck.

In October, 1885, I had the opportunity of observing the very fact to confirm my ideas on this subject. The patient, an English lady and renowned pianist, was affected with the spastic form of dyskinesy. This affection, which existed some five years, had begun on the right side and extended gradually, after two years, to the left one. She had been treated by several European nevrologists. One of her countrymen had called it neurasthenia and for several months the continuous current was unsuccessfully applied. She had lately also been treated, though without any result, by the method of Schott. When she applied at my office, I had already treated several patients by the named method, and I was determined to examine more carefully than I had done previously the muscles of the forearm and of the hand; to see whether I would not find some deposits of myositis. I found fourteen in the arms, forearms and hands; those on the right side (being of older date), were on the average bigger and harder than those on the left. There were some nodules in the anterior brachial, in the long and the short supinator and in the long flexor of the thumb; the dorsal and palmar interossei muscles were tumefied and sensitive to pressure; indura-

tions were even found in the belly of the deltoideus and the big pectoral muscles on both sides. This was an excellent case for examination, but not very easy for treatment. The affection was an inveterate one and of such extent that really rare perseverance was necessary on the part of the physician and the patient in order to remove the indurated areas. Then again, if I did succeeed in restoring the muscular system and the articulations to their normal state (there was a small effusion in the joints found by the thumb with the metacarpal bones) we would be in an excellent condition to discuss the connections of dyskinesy and the objective muscular lesions. If the primary and chief complaint was cured after the removal of these deposits, there would be abundant reason to believe that the latter were a secondary affection and that myositis was at the bottom of all. For more than two months I gave daily sittings which lasted at least half an hour before I had caused the complete disappearance. At the end of this time nothing of these different indurated areas remained; the most minute examination of the formerly affected regions did not reveal the slightest remnant of the muscular inflammations. For about a fortnight the patient was able to play for rather a long time without getting any cramps; at the end of the treatment she was able to write as long as she pleased wihout becoming attacked by spasms, fatigue or trembling. (Before the treatment the cramps were produced in writing as well as in playing.)

This was then positive proof to me, first, that desseminated or symetrical deposits of chronic myositis of the hand, the arm and the forearm might be followed by the classical symptom complex by previous authors called writer's cramp, pianist's cramp, etc., second, that when the myositis is cured, dyskinesy disappears. Having ascertained this, I could now understand the success I had obtained the year previous in applying Schott's method[1].

(1) It seems to me that, at least in most cases which were treated by Schott's method, we had to deal with muscular inflammations,

I do not mean to say that all writer's cramps are secondary to chronic myositis; that they are all cured by massage. There are some cases in which no deposits are found in spite of the most careful examination; there are others which we cannot cure by massaging the detected deposits. Outside of the patient I mentioned, I treated twenty-seven others. One of these, a lady, was affected with cramps only on writing. This makes twenty-eight cases; in twenty-two I found muscular inflammations, and in six I did not find anything. In these six cases I nevertheless performed general massage of the arm. In the case of one patient who was treated for some weeks I obtained a slight result; in the others I did not obtain anything. I therefore did not believe that much could be expected from massage when nothing tangible existed in the muscles. We shall not always be successful in cases which seem the most favorable.

In November, 1888, I massaged an old notary of Paris, who for twenty years was suffering from writer's cramp. His affection was so bad that for several years he exclusively used an American writing machine. I found deposits of myositis in several muscles of the arm, in the large pectoral muscle and in the shoulder; effusion into the sheath of the long flexor of the thumb, on a level with the thenar eminence; tumefaction of the dorsal and lumbrical interossei muscles. I performed massage for more than two months without interruption. The muscular inflammations disappeared; the arm was much stronger than before; the pain embracing the whole arm (probably of rheumatic origin), of which he complained when I saw him for the first time, was gone; but the dyskinesy persisted. In another patient, whose vocation obliged him to write, I found myositis of the forearm, the arm and the hand.

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probably very frequently only slight ones. But not knowing the part they play in the production of writer's cramp, they were not recognized. In performing friction on the muscles of the arm with the thumb, we never failed to exert, without knowing it a favorable influence on the deposits of myositis and at the same time on the disease which we are now studying.

I massaged for seven weeks, but the result was very little encouraging. This time, however, I was able to explain my relative failure. The cramp was one of seven years standing; the patient had gotten extremely nervous and restless, because he was obliged to work in order to earn a living for his family.

I have noticed sometimes in my patients a neurotic disposition, but only five times, what might be called nervousness. Two were writers by profession, nervous already before the dyskinesy. They had become much more so from the day this latter condition developed. The anxiety produced by the prospect of an infirmity, which would prevent them from gaining their livelihood, had very much contributed to the seriousness of their condition. This state always makes the prognosis worse, because of the extreme reflex irritability which follows it. I have already given an account of writer's cramp in my "Traité du Massage" in 1891. Since that time I have quite successfully treated a rather important number of persons affected with writer's cramp. This has strengthened my opinions on the nature of this disease.

I am only half surprised at the tendency of some cases to relapse. Myositis of the upper extremity which gives rise to motor cramps, as well as those met with in other regions, seem to me to have their cause in a rheumatic substratum, and under the influence of this diathesis they may be sometimes reproduced, particularly if a focus of these deposits remains behind.

Like other lesions of myositis they are here very often multiple, and sometimes it can happen, too, that the other arm, usually the left one, is taken at the same time, although mostly in a less degree.[1] I sometimes found simultaneously myositis of the neck, the trunk and the legs, and other affections which some authors attribute to chronic rheumatism,

(1) This circumstance may explain why it often happens that, when one has learned how to write with the sound hand, the latter before long participates in the affection in its turn.

as, for instance, effusions into the synovial membranes, arthritis in the carpo-metacarpal and metacarpo-phalangeal articulations. The general medication, as usually employed in chronic rheumatism, and particularly thermal treatments, are then very useful, but less as an adjuvant to the treatment than to prevent relapses.

In most of my cases the patients showed the tremulent form in a more or less pronounced degree. The same method is applicable in all forms of the disease.

The manipulations which are necessary are effleurage, friction and tapotement. I shall not stop to discuss the object of each of them. The modus faciendi has already been described in the previous part of this work.

### OBSERVATION XVI.

*Multiple Myositis of the Arm and Forearm.—Writer's Cramp.—Massage.—Cure.*

Mr. M., 36 years old, business man, for three years (since 1887) suffers from writer's cramp. This affection developed gradually. It was considerably increased after violent nervous excitement, which he experienced some years ago. He was not able to tend to his business for some time. Formerly he wrote well and quickly; now he is obliged to resort to a typewriter. He cannot play the piano nor do any fencing; when he has held a foil for 5 minutes it drops out of his hand. Treatment with electricity continued for 4½ months; then hydrotherapy. General nervous excitability diminished, but the local conditions persist. Injections of strychnine into the arm without any effect. The patient can write rather fairly well for 3 or 4 minutes, but before long he experiences a painful sensation of fatigue in the articulation of the hand, which soon extends along the arm to the shoulder. The pen oscillates in the direction of flexion and supination; involuntary movements or flexion on a level with the radio-carpal articulation. Clonic contractions of the pronator radii teres, which are distinctly visible on the surface of the arm. The writing is difficult to read; if he writes for some time it becomes quite illegible. Both first dorsal interrossei swollen and sensitive to pressure along their entire length. Along the palmaris longus muscle, marked induration of the size of a small almond; another one along the common extensor, which presents the consistency of rather a hard cord. The long supinator and the anterior radial are sensitive to pressure, and are the seat of more or less extensive muscular inflammations. Deposit on the humeral attachment of the deltoid; very violent pain on pressure on a level with the pectoralis major.

**Massage.**—After 2 months of treatment no deposits of myositis. The patient is able to write as long as he likes, and devotes him-

**self to all kinds of exercises that had been rendered impossible. I received information through a friend of his more than 4 years later that the cure still persisted.**

## OBSERVATION XVII.

*Myositis in Different Muscles of the Upper Extremity in a Violinist.—Difficulty in Playing.—Massage.—Cure.*

M. T., 44 years old, violinist, suffers from indistinct pain in both arms for the last 18 years. Thermo-resinous baths, seasons at Aix, without any permanent results. This man, who is a real artist, is very much affected by his condition, especially since he has not been able to use his violin for several years. As time goes on the difficulty increases. It consists in fatigue, which affects the hand holding the bow, and this pain is soon attended by painful tremor of the thumb, forefinger and middle finger. Discords are produced, tones are delayed, the notes not well brought out, because the fingers of the left hand can no longer touch the strings with precision. He has consulted several well known nerve specialists. None of them discovered the local causes. All they prescribed was friction with chloroform liniment and laudanum. These remedies affected no improvement. For 6 months he was treated with electricity without any results. Influenced by this almost hopeless condition of his affection, the patient has become highly irritable, suffering from sleeplessness and constant agitation, etc. When I saw him for the first time in the middle of September, 1889, this is what I found:

Right Arm.—First and second dorsal interrossei muscles swollen, especially the last one, great sensitiveness to pressure. Slight effusion into the first intermetacarpal articulation. Nothing in the lumbricoides muscles. Swelling on a level with the apponens pollicis. On palpation, it seems a little more resistant than normally. At the dorsal surface, slight effusion into the sheath of the tendon of the long extensor of the thumb. This can be traced to the upper articulation of the corresponding metacarpal bone. Marked induration near the attachment of the long supinator to the external condyle; another indurated area, less resistant, of the size of an almond in the common extensor. Some effusion into the acromia-clavicular articulation, which is very sensitive to the touch.

Left Arm.—The adductor and the short flexor of the thumb are sensitive to pressure; the sensitiveness is especially pronounced in the neighborhood of the corresponding carpo-metacarpal articulation; the muscles are the seat of some resistance. Deposits on the internal surface of the arm on a level with the lower attachment of the deltoid, along its posterior border. Swelling and sensitiveness on pressure along the upper border of the trapezius.

Massage.—After 4 weeks evident amelioration the treatment is interrupted, because of my leaving Ragatz for Paris. The patient declares his hand to be stronger and more nimble. Treatment is resumed in October. After 6 weeks the deposits of induration, the tumefactions and the small effusions have disappeared; the patient has regained his former dexterity.

April, 1892, his condition was the same.

*Lower Extremity.*—Myositic deposits of frequent occurrence in gluteus medius.

I shall further on, when I am going to treat of sciatica, speak of the relation existing between this affection and muscular inflammations in the gluteus medius, viz., the peroneal muscles.

Myositis of the thigh nearly always has its seat in the triceps muscle. Sometimes it is also found in the adductors. It is then of traumatic origin. It is very frequent in all the muscles of the leg and especially in the muscles in the region of the tendo-achillis, where their favorite seat is the inferior fourth and inner side of the muscles forming the calf, the pain often radiating upwards into the whole leg and especially into the calf. These deposits occasion generally a big swelling of the adjoining parts, especially in the evening, when the patient has been walking during the day, and often constitute a real cushion, giving rise very frequently to a wrong diagnosis. Thus we may easily be led to believe that we have to deal with heart disease, if there exists at the same time some slight sign on the part of the heart, and more particularly with anæmia, if there be some apparent symtoms of this disease. I have seen in my practice enormous swellings, with deformities of the leg, as a consequence of this disease, and time and again observed how the invalid, dragging his leg, was obliged to give up walking after only a very short time.

Massage in these cases is very painful (particularly on the internal side), but yields always the most satisfactory results.

Among a great number of cases of this class which I treated, I can recall one in particular, namely, a chambermaid, whom I treated two years ago in Paris. During the greater part of the day this girl was obliged to stand. The swellings had assumed such proportions that her legs, which were quite well formed by nature, had taken on an almost cylindrical shape. She was about to leave her position, not being able to walk any more, when she came under my observation. After two months daily energetic massage (she had two big, hard

lumps on one leg and three on the other), she was relieved of these lumps and the legs had regained their natural form. She was now able to walk as well as before and has always remained well.

§ 2.—*Contractures and Muscular Atrophy.*

We are obliged to study, together with the affections of the fleshy parts of the muscles, two secondary conditions, which may follow all the diseases which we have already seen, namely of the articulations and their adnexa, as well as those of the osseous and muscular system. These two conditions are contractures and atrophy. In many of them massage is useful. We might even say that it is so in all; but nobody would think of affirming that he can definitely cure contractures, no matter what their origin or cause is. He may effect their disappearance, and it is then a really curative medication; but he may also simply contribute to the improvement of the nutrition of the muscles as a simple adjutant of some more radical therapeutical means.

On account of this fact alone, that identical treatments directed aginst a syptom complex, which in itself seems to be the same, can yield quite different results, it is indispensable to analyze the cases, to trace them back to their origin, and, if possible, to determine their respective nature.

It is wellnigh impossible to study contractures and atrophy separately; they are two closely connected conditions which often exist either simultaneously or succeed one another. A contracted muscle will in time atrophy; the contrary will also happen. It is an exception for a muscular atrophy not to be followed by contraction of the primarily affected muscle, or of the antagonistic muscles. This close relationship does in no way implicate the identity of the two conditions. We may conceive a priori that differences exist between them which may be easily ascertained. It is possible for the nutrition of a contracted muscle to be intact; for all its elements to be preserved, and for sclerosis and fatty degeneration to be absent. In regard to this the anatomical re-

searches which have been conducted so far have not established definite ideas. Few have been the researches directed towards recent contractures. Then again, examinations by sight and by touch do not always reveal to us that diminution in size and emaciation which characterize pronounced atrophy; contractures and atrophy must therefore be studied separately.

Some years ago Duplay declared that contracture is an acute and necessarily spontaneous spasmodic shortening of the muscular fibres. Mr. Charles Richet calls contracture a prolonged muscular contraction which cannot be relaxed under influence of the will.[1] Mr. Erb speaks of a permanent shortening of the muscles, which produces a gradual approximation of their joints of insertion. In 1875 Mr. Straus gave the following definition: Contracture is a persistent and involuntary tonic contraction of one or several muscles of animal life[2].

M. Blocq considers contracture as a pathological condition of a muscle characterized by involuntary and permanent stiffness.

According to this author, quite an appreciable number of conditions, which are similar to contracture, are erroneously connected with it.

In true contractures we find a constant exaggeration of the tendon reflexes and an habitual spinal trepidation; the antagonistic muscles are always affected; this contracture often begins under the influence of a traumatism. It exhibits variations in its intensity. On examination of the muscles a sensation of elastic resistance is experienced. It disappears after a certain length of time which varies a good deal and after applying an Esmarch bandage. It relaxes completely during chloroform narcosis and the electric reactions of the muscles are normal.

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(1) Richet. Pathologie des nerfs et des muscles, p. 482.

(2) Straus. Des contractures, thèse de concours d'agrégation, Paris, 1875.

In false contractures there is no exaggeration of the tendon reflexes. These are, on the contrary, often diminished and sometimes even abolished. There is no spinal trepidation, the antagonistic muscles are not always affected; there is no tendency to generalization; the traumatism has no influence on its occurrence. It is of variable intensity. A sensation of fibrous resistance is experienced; Esmarch's bandage as well as chloroform narcosis do not modify the condition. In some cases the electrical reactions are altered.

Blocq has done his utmost to find a criterion which would enable him to distinguish true from false contractures[1]. If we admit that the symptoms adduced by him are correct, there always remains a gap from want of completeness of the general definition. Can we assume that all conditions called false contractures are endowed with involuntary and lasting stiffness, that in fibrous retractions for instance, these have preserved their clasticity or that they have lost it only for a certain length of time?

Be that as it may, alternations universally called contractures, are found in affections of the muscular system, the articulations and of the nervous system, and until Blocq's nomenclature is definitely accepted and his definition precisely stated we have no right to reject some of these changes or to consign them to a complimentary chapter.

We are confronted with facts: Contractures are observed to follow primary affections of the muscles and acute and chronic myositis.

We may find contractures, although the muscles have not become affected; it is these that the deformities and defective attitudes of the limbs after articular affections are due to. Blocq considered these affections as a type of true spasmodic contractures. These were described a long time ago by Hunter, who considered them as a sympathetic result between the muscles and the joints. Contractures were carefully studied

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(1) Paul Blocq. Des contractures, thèse de doctorat. Paris. 1888.

by Duchenne, of Boulogne, who called them reflex ascending contractures of articular origin[1]. The affected muscles are the seat of more or less violent pains, which the author just mentioned ascribed to a morbid state of the gray matter.

Bell ascribed the defective attitudes to a position instinctively taken by the patient in order to relax the muscles and relieve the pain. Bonnet attributed everything to the pressure exerted by the morbid liquids of the articular cavities on the ligaments. But defective attitudes are found in arthropathies which are not painful and in dry arthritis, when there is no effusion into the synovial membrane; they result from muscular contractures. These are sometimes developed at about the same time as the arthritis itself, and are not followed by any appreciable anatomical alteration of the muscles or their neighborhood.

There exists perhaps no essential difference betweeen these contractures and those which are observed in some diseases of the nervous system and of which the permanent contracture of the hemiplegic muscles is the prototype. The shortened muscles suffer and their fibres degenerate in time. This is what has been demonstrated by Hermann, Ormerod and many others.

Contractures of nervous origin were at first explained by such a convenient theory that it has been adopted by many physicians. The muscular fibre possesses in its normal state an activity of its own. This latter maintains the muscle in a state of permanent contraction, it is the muscular tone, a sort of excitation maintained by the spinal centers. The paralysis of a muscle is followed by an increase of the tone in its antagonist. The position of an organ depends upon the equilibrium maintained by all the muscles that support it or impart motion to it. Under this hypothesis, deviations can always be explained.

Mr. de Saint Germain says: "Nothing is more easy to explain than muscular torticollis. When we examine a skeleton we perceive that the head is in an unstable equilibrium on the

top of the vertebral column, so situated that the anterior part of the head, which consists of a portion of the skull and the face is heavier than the posterior part. This fact, which is very evident in man, is much more so in animals. Thus we see that the head is only kept in equilibrium by the power of the muscles which are inserted into it and which act as shrouds, and, if there is any inequality in the lateral tractions, the equilibrium is soon disturbed. This inequality may, theoretically speaking, be produced either because there is too much traction on one of the cords or because there is not traction enough, but the rupture can very rarely be attributed to paralysis of one of the agents exerting the traction. Most frequently one of the cords pulls too much and one of the powers becomes predominant, while its antagonist remains normal; in a word, the disturbance of the equilibrium generally results from the contraction of a muscle and not from the paralysis of its antagonist." [1]

A great deal might be said on this ingenious theory. It is probably true in some cases of inflammatory torticollis, but in admitting the physiological starting point, namely, the maintenance of the equilibrium by antagonism of the symmetrical muscles, all objections are not refuted. We have seen cases of circumscribed myositis followed by radiating to other parts without any change of place of the head and this is easy to understand. Excessive avtivity on the part of one muscle calls forth a reaction on the part of its antagonistic muscle, so that the equilibrium is restored.

In contractures of the hemiplegic muscles this doctrine is not easily applicable. Why do some muscles contract on paralysis of the lower extremity, while others remain flabby and undergo atrophy?

Hüter's Theory.—In three articles on this subject, Hüter contested the old theory and left very little of it in exist-

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(1) De Saint-Germain. Chirurgie orthopedique. Paris, p. 202.

ence;[1] his ideas have been adopted by Volkmann.[2] Let us see what he substitutes for it. In his Handbuch der Gelenkkrankheiten we find a scheme which is so simple that it seems useless to me to reproduce it here. This scheme is to demonstrate the manner in which the author conceives of the movements of the foot. According to him it is a simple lever whose point of support is nearer the posterior than the anterior extremity. The first one will incline forwards when its direction is governed only by the force of gravity, because the anterior arm of the lever is the longer. A deformity will result which is called talipes equino-varus. If the extremity remains horizontal it will depend upon the intervention of the muscles.

If all of the muscles are paralyzed, the toes are lowered, the heel is elevated, and the points of insertion of the posterior muscles approach each other. Now the muscular substance possesses an incontestable property. Every time the points of insertion of a muscle are approximated for some time, its nutrition suffers and the muscle will contract. The author says: "This law is confirmed by our anatomo-pathological data and by experiments. It is sufficient to wear for several weeks a retentive bandage near a joint. If we have put up the fractured forearm at right angle with the arm, so that the articulation of the elbow, which is absolutely normal, is immobilized, we shall find, after removal of the apparatus, that the movements in the direction of extension are very limited. In order to convince oneself of the nutritive change all we have to do is to put the patient under an anæsthetic and we shall see that we can, without inflicting any violence, reach the maximum of extension."

He adds further "As there are very few cases of absolute and complete paralysis which render contraction of the muscles impossible, an acting force capable of shortening them has been searched for, for want of something better. One has

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(1) Arch. f. klin. Chir., IV. Bd., p. 495—97.

(2) Samml. Klin. Vorträge. I. 1879.

had recourse to the muscular tone. Does it exist? That is to say, can a muscle undergo spontaneous shortening after complete suppression of the innervation? This is a physiological question which we cannot discuss. It is of little importance in the explanation of paralytic contractures. Nobody who believes in the existence of the muscular tone would admit that an agent of so little energy could support the weight of a limb for months and years."

Hüter's objections seem to me more decisive than his theory itself. It is based on one fact which is only true as regards the lower extremity. One would often be embarrassed to explain how the extremeties of a muscle can get nearer to each other. According to Hüter there is no difference between contracture and atrophy. As soon as the nutrition has become defective everything else is only a question of degree. It is rather difficult to explain, by the aid of this doctrine, many contractures of muscular origin, which resemble a great deal those that are produced by affections of the nervous system.

Charcot, Vulpian and Erb have placed in the category of reflex phenomena those muscular affections which were but the expression of a state of the gray substance of the brain, originating from the transmission of articular irritant phenomena through the nervous system. One is thus led to admit that there exists in the medullary substance a certain relation between the cells originating from the articular centripetal nerves and those of the motor nerves of the muscles in which the various obserted affections are localized.

Nearly all those who have studied the question have expressed themselves with the same degree of reserve. A perceptible medullary lesion may exist, but it is probable that in many cases the disorders do not progress so far; it is probable that the lesion is limited to a sort of cellular superexcitation which is the cause of the contracture. Like all irritations of the same kind this irritation will soon exhaust the element and give rise to numbness, so that paralysis and atrophy

will be consecutive to the initial contracture if the latter is prolonged. Is this theory final and conclusive? Does it suit all cases? We cannot affirm it. It is difficult to explain contracture of the hemiplegic muscles by a primary irritation of certain groups of medullary cells. Besides, it matters little All we can say is that Duchenne's doctrine is applicable in some cases and Hüter's in others. If we ascribe the first stage of the process to the irritation of the medullary cells, we may explain the second one by the nutritive disturbances which the muscle whose extremities approach each other is undergoing. The origin and cause of contracture and atrophy are thus elucidated.

Sometimes real paralysis develops in those affections in which contractures have occurred. It is then that Hüter's doctrine may be applied. Paralysis as well as contracture may terminate in *atrophy;* but the latter is often developed in articular arthropathies from the very onset. In making injections of liquid into the synovial membranes, Mr. Valtat has been able to provoke it without any difficulty[1]. It is generally observed in the peri- or para-articular muscles. It effects by preference those which are used for the purpose of extension. Atrophy of the deltoid is not at all rare after affections of the scapulo-humeral joint. When the hip is affected, it is most often the gluteal muscles that suffer; after diseases of the knee atrophy of the femoral triceps often occurs. As Vulpian has justly remarked, it is above the joints that the trouble is produced. In most cases it is difficult to adduce long continued rest as an etiological factor and to connect the observed phenomena with atrophy due to inactivity. The doctrines proposed in regard to contractures are applicable to the cases we have almost always observed in our own practice.

From what we have said this one fact is certain, that whatever be the predominant phenomenon, the nutrition of

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(1) Valtat. De l'atrophie musculaire consecutive aux maladies des articulations, Paris, 1877.

the muscle is always affected. How this is produced is of little importance;whether the general state of health plays a prominent part in the production of the affections or whether the atrophy and the contracture are produced in a direct or a reflex way, we may nevertheless interfere advantageously and by persistent local medication we may improve the nutrition of the muscle. This was our object in view.

Before taking up massage proper, I used electrotherapy alone in the treatment of muscular atrophy, but I was not satisfied with the latter. It is sometimes a useful adjuvant, but I ascribe the greatest part of my success to massage. With it alone I have cured cases in which electricity did not give the desired results[1]. It would, however, be a fallacy to suppose that it is always so in old atrophies and especially in those which are secondary to white swelling. In old persons great perseverance is required. We must not be afraid of energetic manipulations, rubbing, kneading and tapotement; passive movements are also indicated. One of the best manœuvres consists in having the patient execute active movements and resisting them. When atrophy has attained to a certain degree of development, these movements are so feeble that they are of little or no use. In these cases massage must be performed first in order to increase the nutrition and vitality of the muscles. The nerves must also be massaged, and it would be well to combine digital pressure, which we have mentioned elsewhere, with the other manipulations. In order to appreciate the results of the treatment repeated measurements must be taken, and that at exactly the same level. Care must be taken not to press the measure more on one side than on the other.

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(1) It has been maintained that massage acts only on the atrophy of the muscle, but that it is of no influence on the frequent complication of fatty degeneration; that, in order to overcome this we must resort to electricity. Without contesting its favorable influence, I have seen cases, even very advanced ones, where by means of massage alone I was able to overcome the degeneration completely and restore the former firmness and consistency to the muscles or group of muscles.

The results are much less satisfactory in contractures and atrophies resulting from an affection of the nervous centres than in those which are secondary to a peripheral alteration of the articulations, the bones or the muscles.

§ 3.—*Affections of the Tendinous Sheaths.*—The peritendinous synovial membranes resemble in their structure and their functions very much the articular synovial membranes; their affections are about the same. Tenosynovitis with rice kernels seems to form an exception, it is the only one in which massage does not yield good results. I have sometimes obtained some improvement if I began early, but it was only temporary and in the end surgical interference was always necessitated. If Carré's researches are confirmed, this persistency of the disease is explained, because according to him it would be of a tubercular nature[1].

In the vicinity of the carpal and carpo-metacarpal articulations are often found small, circumscribed tumors called ganglions. They contain a gelatinous substance. These cysts are diverticulae of the carpal or tendinous synovial membranes of the extensors. They are but rarely found in relation with the flexors. If the disease is of recent date and the cystic wall is not too tense they can be permanently cured by massage. Only too often have various treatments been resorted to with the simple result of increasing the thickness of the wall. The rupture of the sac with the fist or with a hammer and its discission result in the effusion of its contents into the contiguous cellular tissue, where it is absorbed. The solution of continuity cicatrizes, the ganglion closes up again and goes on secreting the same as before. Massage performed after discission and crushing is sure in almost every case to end in cure.

Sometimes the disease is more obstinate. A cure is brought about, but a relapse cannot be prevented. This happens particularly when there is an evident hereditary predisposition.

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(1) Carré. Beitr. f. klin. Chir., Bd. VIII, T. 2.

Isolated cases of teno-synovitis or cases combined with articular affections are painful and tiring. When they are of traumatic origin they are quickly cured. If the case is a more chronic one, and particularly if of a rheumatic nature, the treatment takes longer.

The diseases of the tendinous bursa of the tendo-achillis have been studied very little up to the present time. It is known that this bursa is often affected in gonorrhœa, but no one has devoted himself to the study of those other affections which may concern it.

Considering its anatomical situation it seems to me that it is of a greater importance than the classical works attach to it.

Richet says: "At the insertion of the tendo-achillis, at the posterior part of the calcaneum, there exists between it and the upper part of the bone a small serous bursa. The narrowest and densest part of the tendon corresponds precisely to the top of the curve which it describes, that is to say, 3 or 4 cent. above the upper border of the calcaneum. It is surrounded in front and on the sides by very thick cellular-fatty tissue; whereas behind it is only covered by integuments which slides over it. In front of this cellular and fatty tissue, which is not less than a centimeter in thickness, we find the posterior surface of the tibia, the synovial membrane and the articular surface[1].

The bursa is indeed insignificant in its size; on the other hand, however, it is in close proximity with a cellular adipose atmosphere which is very susceptible to inflammations.

That a synovitis of the serous bursa of the tendo-achillis may exist, which rarely remains localized, is very often ignored and still more often improperly treated. It usually begins insiduously without any known apparent cause. The patient does not experience any pain, but simply a feeling of uneasiness and fatigue, especially at the insertion of the tendon.

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(1) Richet. Traitè d'anatomie chirurgicale.

The surrounding cellular fatty tissue becomes the seat of a more or less hard infiltration. The margins of the tendon which are so prominent in thin persons become dulled and invisible; there remains but one way of remedying all this, namely, massage.

In inflammation of the mucous bursae of different regions of the body massage has always given to me good results. I have often had to treat those of the popliteal space, those which correspond to the lower insertion of the semi-membranosus muscle (patte d'oie), and to the vicinity of the head of the fibula[1]. They are sometimes affected separately, and this is most freqeuently the case when effusions into the femoro-tibial joints exist. I do not share the pessimism entertained by some colleagues, who claim that nothing is gained in these cases by massage.

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(1) The last ones, the disease of the muscus bursa of the tendo-achillis included, are more appropriately placed in chapter VI amongst the affections of the subcutaneous bursæ.

## CHAPTER VII.

### *Massage in Affections of the Nervous System.*

At the beginning of this century massage had been used as an anæsthetic means. Thirty years ago Meding employed it for the first time in writer's cramp. Former attempts were so few and so completely forgotten, that massage is not even included in the adjuvants of ordinary medications of the nervous system.

We shall now study the general affections of the nervous system, then those of the nerve centres, and finally those of the peripheral nerves.

### *Massage in Neuroses.*

*Hysteria.*—The treatment of this affection, or rather of a part of its symptoms by massage, has been attempted more than once; it is difficult to tell what the results have been. When medications of this kind are spoken of, there is no mean between enthusiasm and distrust which recognizes the published facts as a mere advertisement. It seems, however, that therapeutical manipulations were of great benefit in painful manifestations of hysteria, so that distinguished physicians and surgeons took notice of it. It is only a few years ago that the treatment of hysteria by massage was resumed in America. Its champion was no less a man than Mr. Weir Mitchell, a scholar who is an authority in all that concerns the physiology and pathology of the nervous system. Whereas Recamier and others only intended to combat some manifestations of hysteria, particularly the muscular contracture, Mr. Mitchell tried to cure the neurosis

itself. He was convinced that if he could cure it, all accessory affections would disappear. The first work in which the author mentions his treatment of hysteria is called: "Fat and Blood and How to Make Them," a title which gives us an idea of the author's doctrine. He regards the cause of all to lie in the whole economy, in the organic transformation. In an hysterical person all the tissues suffer. His nervous system is unable to play its proper part, because it is exhausted and as though it were placed into the centre of an organism which is itself exhausted. In order to re-establish things to their normal state it is necessary to remove the patients from all external impressions which might otherwise exercise an unfavorable influence on their condition. They must be isolated, a diet must be prescribed which will enable them to recover their former stoutness, a diet which will favor digestion and the assimilation of the excess of substances taken in; it is in these conditions that massage is employed.

Let us suppose that we have to deal with an emaciated, sickly looking person in whom the slightest movement causes violent pain. We wish to restore her health and in accomplishing this we suppose the problem to be solved. From the very first day the masseur or nurse take pains to stimulate the circulation which has been rather sluggish on account of her long staying in bed.

Massage is the factor of a more general procedure, it is the adjuvant to other means equal or perhaps superior to it. The study of these belongs to the general therapeutics on the affections of the nervous system. It has nothing to do with objective and topical massage with precise indications, which we perform. We only mention hysteria among diseases in which therapeutical manipulations may be of use, but we cannot go any farther. It belongs into the realm of the neurologist to study the problem and to show their real value.

*Chorea.*—The use of massage in the treatment of chorea precedes the publications of the School of Amsterdam.

As far back as 1853 Mr. Laisné employed a purely phy-

sical treatment in this affection, in which muscular gymnastics occupied the most prominent part and massage was only an accessory[1]. Mr. Blache, under whose supervision these attempts were made, was so pleased with the results, that in April, 1851, he read an article before the Academy of Medicine, of Paris, in whic h he intended to popularize the method and to demonstrate the advantages that might be obtained from it. Three years later Mr. Parrot published seven observations in all, where he cured old obstinate cases of chorea by means of gymnastics and massage. Other cases have also been reported.

We do not have to make a comprehensive study here of the method. Its employment was rational. This has been proven by its success. We have unfortunately to deal with such a complex neurosis that it is difficult to tell which is the dominant element.

As we have no personal experience on the subject, we shall confine ourselves to these notes derived from other observers.

§ 2.—*Massage in Affections of the Brain and Spine.*

A great deal of thought has been bestowed upon the use of therapeutical manipulations to overcome affections due to hemorrhage or cerebral softening. Ling massaged the cranium. I have no information on the results, do not even know what he expected to obtain. Gerst declares that he obtained good results in concussion of the brain, but as there was at the same time a contusion of the soft parts, the amelioration probably depended on the same effects as are obtained in most contusions; namely, absorption of the sanguineous effusion and the cure of the affection which produces it.

Most authors have in no way tried to modify the intracranial lesions or attempted to influence the circulation of the meninges. Cerebral affections cause more or less complete or extensive paralyses. If we admit that new functional routes are established, that the loss of cerebral substance following

(1) Laisnée. Gymnastique des demoiselles, Paris, 1854.

the formation of hæmorrhagic deposits or softening has only a very slight influence on the movements, it is yet not proved that these movements will get back their extent and energy.

During the period of almost complete paralysis, which follows the initial injury, the muscles are liable to undergo fatty degeneration and atrophy, so that, if later on their innervation becomes relatively good, they will not render the service they would have done, if their nutrition had remained intact. I do not believe that a physical and topical medication like massage will be of any value in the repairing of the injured nervous elements, but experience proves that it is of use as regards the muscles.

In several cases we obtained apparent amelioration.

We must be very cautious in regard to the action of massage in all kinds of affections of the spine. At first sight it would seem to be indicated in *infantile paralysis;* perhaps if it were applied for a fortnight, a month or, at the most, two months, after the beginning of the affections, something would be obtained; but we have almost never the opportunity of performing it. In my "Traité du Massage" I published amongst a few cases that of a child in which massage was successfully performed.

When we see the patients, the initial stage is long passed. We are asked to remedy the atrophy, the limping and similar conditions. It seems useless to me to begin a treatment which would yield no results. Improvements have been noticed after massage and faradization; they have also been noticed without any treatment.

If the patient is improved we have the right to inquire whether this depends on the procedures employed or on the healing influence of nature. I do not possess the necessary facts to solve this question[1].

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(1) During the last few years I had the opportunity of treating some slight cases and it really seemed to me as if I had succeeded in producing great amelioration in the state of the disease. In all of them the treatment lasted rather long.

I might repeat with respect to locomotor ataxia what I have said about infantile spinal paralysis: Massage cannot stop the morbid process, but it alleviates certain painful phenomena and sometimes causes their disappearance, at least for a time.

In late years, massage has been used much more frequently than before in medullary affections. Kleen declares that he has had more or less beneficial results in concussion, hemorrhages, chronic myelitis and even in those which are due to compression. Massage has been used in disseminated sclerosis, spastic spinal paralysis, amyotrophic lateral sclerosis, progressive muscular atrophy, acute anterior poliomyelitis and in paralyses secondary to acute affections, such as intoxications, etc. The results have been rather favorable; it is, however, difficult to make any positive statements.

§ 3.—*Massage in Affections of the Peripheral Nervous System.*—If massage yields no or few results in paralysis of central origin, spontaneous peripheral paralysis, of which cold is most often the cause, is nearly always ameliorated or cured by this means. Berghman and Helleday were the first to recommend massage in paralysis of the peripheral nerves[1]; they said: "We know a case, in which paralysis of all the muscles of the hand and the forearm developed during sleep. When we saw the patient, the condition had lasted for three weeks. For five days he was treated by electricity, but without any effect, the muscular contractility seemed to be lost. The paralysis was even followed by anæsthesia. After a week of treatment by massage, the fingers could already make some movements."

As early as 1863 Mr. Chassagne had proposed in similar cases a sort of massage, which he called massage by percussion. He rapidly raised the temperature from 33° to 34° 5 centigrade. Mr. Chapoy in reference to radial paralysis, says: "Massage, properly so called, if performed with force and at

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(1) Berghman and Helleday, lococit.

the same time with delicacy and precaution for one hour, must not be neglected. It favors the action of electricity which, without the former, is sometimes ineffectual[1]."

In several cases of peripheral paralysis and particularly in those of traumatic origin we have found massage as a means of bringing about a rapid cure.

Let us now proceed to the sensitive peripheral disorders. These disorders are grouped under the generic name of neuralgia; but among neuralgias there are two forms with well defined symptoms. First, painful phenomena secondary to compression and irritation of the nervous filaments by chronic inflammatory processes of the cellular tissue or the neighboring muscles. We have already called the attention to those cases in chronic myositis and I shall speak of them later on. Second, neuritis. There are certainly still other forms of neuralgia: reflex neuralgia, neuralgia due to general causes, secondary to intoxications and those produced by pressure on the parts of tumors. We shall as much as possible restrict ourselves and only study the first two varieties.

*Neuritis* may produce painful affections with paroxysms, as it is often observed in prosopalgia (tic douloureux). Intercostal neuralgia, and particularly sciatica, are sometimes the result of a rheumatic inflammation of the affected nerves. Some authors, and especially Landouzy, mention neuritis as a frequent cause of sciatica, and the last writer gives as a proof of the presence of this affection, the rapidity with which muscular atrophy is developed in the muscles innervated by the sciatic nerve.

As to myself I maintain that neuritis ought to be looked upon rather as an exception in the production of sciatica.

At all events, if that be the case, massage is an excellent means of influencing and curing it.

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(1) Chapoy, de la Paralysie du nerf radial, thèse de doctorat, Paris, 1876.

In certain epidemics of influenza, which occurred during the last few years, I have had the opportunity of treating successfully several cases of polyneuritis. The patients, although apparently in perfect health, felt so weak that they could not stand up. The muscular atrophy progressed rapidly and resulted in functional weakness. Here as in neuritis pressure and trepidations along the affected nerves are also useful.

For a number of years I treat intercostal neuralgia by massage in using friction and pressure on the affected nerve. I always begin the séance by effleurage, performed as in other regions of the body; I have been very successful. In a patient suffering for two years from neuralgia in the fourth, fifth, sixth and seventh intercostal spaces on the left side, all internal medications, generally resorted to in such cases, were vainly employed; electricity did not succeed any better. I obtained complete cure after seven weeks. There was no relapse for fourteen months. In some cases I have only obtained amelioration. We must not forget that massage as performed in intercostal neuralgia produces a particularly painful sensation and that this treatment is not easily applied in faint-hearted or very nervous persons.

In January, 1889, I had to treat a patient who suffered from violent bilateral intercostal neuralgia since more than a year; all the nerves were affected. The pain was particularly sharp and stabbing along the nerves which corresponded to the last ribs. Electricity and thermal treatment at Aix-les-Bains were unsuccessful or had only for some short time releived the pain. Massage was finally resorted to; at the beginning it was very painful, but its effects were surprising; after seven or eight weeks the patient declared that he did not suffer any more and stopped treatment. Towards the end of May a new attack of neuralgia was produced which had its seat about 3 inches (8 cent.) outside of the mammillary line. Cure was obtained after two weeks of treatment.

I publish here a case of neuralgia of the musculo-cutaneous nerve of the arm.

## OBSERVATION XVIII.

*Neuralgia of the Musculo-Cutaneous Nerve of the Arm.—Massage.—Cure.*

Mrs. N., 30 years old, complains since March, 1877, of a tingling sensation in her right arm. This sensation which is rather unpleasant than painful, does not alarm her. Later on it becomes aggravated, so as to be extremely painful. The pain is located and starts in the region of the armpit and radiates down the entire forearm along the course of the musculo-cutaneous nerve. Faradic currents, Russian baths, frictions with various ointments, did not yield any results. Besides the pain is radiated upward also into the whole sub-scapular region and into the nape of the neck. Everything disappeared for some time, and she considered herself cured, when, after a violent exertion of the shoulder and the arm, the pain reappeared more violent than ever.

When I saw her for the first time I did not find anything abnormal in the articulation of the shoulder, nor in the muscles of the shoulders and the arm. The movements were normal in extent; those of elevation, and in a posterior direction were very painful. Pressure along the musculo-cutaneous nerve and a sudden movement of the arm or shoulder were sufficient to call forth a paroxysm. The same treatment was resorted to as formerly, but this time without any result. Massage after 12 séances already the patient felt markedly improved. She began to use her arm. Radical cure after 30 sittings.

In no affection outside of sprain does massage yield such brilliant results as in sciatica[1]. It is, however, necessary to begin massage at once, the very day after the first symptoms are felt, even on the same day, if possible. With two daily sittings the patient is in this way cured after a week or ten days. The treatment is at this time more painful than it would be later on. But by beginning very gently and by increasing the pressure little by little, we end by rendering the pain bearable. We have unfortunately seldom the opportunity to treat a recent case of sciatica by massage; the most courageous people will wait; when the attack is over they hope it will not come back. This expectation is not always verified. If the attacks are less violent, their frequency increases; a continuous element is added to the paroxysmal and intermit-

(1) We make of course an exception in those cases, where a mechanical cause is constantly acting on the nerve as for instance pressure from tumors or ostitis resp. periostitis in the vicinity.

tent one; the patients suffer sometimes more, sometimes less, but they always suffer. At this stage the most incongruous medications are tried: camphorated or morphinated blisters, cautery (points de feu), local douches, injections of morphia, opium, sulphate of quinine, bromide of potassium in large doses. Neither revulsives, anæsthetics nor derivations are of any use. The pains are relieved and a relative rest is obtained, but after slightly prolonged exercise or the slightest exposure to cold, the patient will suffer again. So little is known of massage by the public that it is only thought of very late in sciatica, when other medications have failed. The conditions are then much less favorable than they are at the beginning; even in inveterate cases we may promise cure without any fear of meeting contradictory results, provided absolute confidence and patience can be secured both on the part of the physician and on the part of the patient. I never apply massage in sciatica for more than five or six weeks if I do not obtain any results. In inveterate sciatica I have sometimes massaged for three weeks or a month without any result; I began to despair, when all of a sudden, from one day to another, was changed. The amelioration became evident. I continued and the sciatica was cured. Passive movements are indicated; in inveterate cases followed by more or less pronounced muscular atrophy active movements with resistance may be added. Even at the end of the acute attack active movements are useful. When the paroxysm is over I have the patient walk about in the room with the aid of a stick; as soon as he is able to do so, he may take short walks in the open air.

Inasmuch as the sciatic nerve divides into two branches, each one is of course of smaller size; hence it is more difficult to massage them; so much the more, as they are also more deeply situated. We are obliged to use a great deal af force in order to have the thumb descend between the firm and steady muscles of the calf in order to reach them. In its course along the thigh the nerve is very easily gotten at. It is here quite superficial. In the region of the backs the large

sciatic nerve, which is here relatively superficially seated, too, is covered by fat and muscles which offer to the pressure of the finger less resistance. Consequently it is not very difficult to get at it.

I always employ tapotement along the nerve together with frictions. Formerly I had recourse to a manœuvre which was to produce distension of the nerve, but as it did not yield any results, I gave it up. Electricity is sometimes successfully used in acute or subacute cases. I have tried to combine electrotherapy with massage, but without any advantages; I now use massage alone.

When sciatica really does exist the diagnosis is very easy, and although its treatment by massage is the principal duty of the physician, he must never lose sight of the concomitant general affections which may have produced the disease and which contribute to maintain it. If he does not desire to be half way successful or to obtain nothing at all, he must never neglect these secondary indications and particularly in view of its rheumatic origin, thermal medications.

## OBSERVATION XIX.

*Acute Sciatica Along the Whole Course of the Nerve.*

Mr. M., banker, suffering a great deal from rheumatism, was suddenly seized by pains in the left buttock. The pains were only slight at the beginning; but before long they became violent and after a few hours extremely intense, and they extended even into the posterior part of the thigh. He had to be brought home in a carriage, as it was quite impossible for him to lean on his left leg. The pain was so violent in spite of frequent injections of morphia, that they deprived him entirely of his sleep, and the slightest movement provoked an attack. When I saw him, 48 hours after the invasion of the disease, he was confined to his bed, quite helpless and powerless, and it took him several minutes to turn from one side to the other. This was necessary in order to allow me to apply massage properly. The pain was of maximum intensity in the gluteal region, but it involved the whole length of the nerve down to the foot (particularly the external branch). It sometimes changed places, sometimes residing more in this part of the nerve, sometimes in another. 8

Slight swelling along that part of the gluteal region marking the

course of the sciatic nerve. Even slight pressure on any point along the nerve produces violent pain and makes the patient cry out. On this account massage is very gently performed in the form of slight effleurage. Already after the first two séances (each of them lasting half an hour), which were performed the same day, the patient is able to sleep a little the following night. Steadily improving, he was able to get up on the sixth day and to walk about a little in his room. After 4 more sittings (still 2 sittings a day) the patient was able to walk to his office without feeling any pain and almost without any inconvenience. As the amelioration progressed I was able to increase the pressure and during the last days I was able to perform real frictions.

Before I conclude this chapter I have to speak to some extent about a very frequent complication of sciatica, namely that of chronic myositis.

Rheumatism produces in many cases of sciatica a special myositis, which comes on either before or after the inflammation of the nerve itself. This presents on palpation all degrees of the muscular inflammation. I have very carefully explored all the muscles situated in the course of the sciatic nerve and in its neighborhood, and to my great surprise only one of these muscles seemed to be the favorite seat of concomitant myositis. It is the gluteus medius and particularly that portion of it which corresponds to its upper insertion. If we follow, however, the course of the nerve downwards we notice sometimes a new deposit in the calf on a level with the peroneal muscles. These deposits may extend along the entire length of the muscles, but its maximum development is most often found towards its lower insertion. This explains, in my opinion, the pain which persons, affected with sciatica, very often complain of in the neighborhood of the external malleolus.

It is difficult to determine which one of these two phenomena, neuralgia or myositis, is first produced. Sometimes they are simultaneously, the same cause namely rheumatism, provoking each of them. At other times, from the very onset, the nerve alone seems to be affected, but the muscle or the muscles are not long before becoming affected in their turn. Finally, in certain cases I have noticed that the glutens medius or the

peroneal muscle was alone affected and that its myositic state produced all the symptoms which one generally attributes to sciatica alone. This last fact may account for it that in many cases we are liable to err and that, if we were to diagnosticate the inflammation of the glutens medius from the very beginning, we would succeed in impeding its further development by appropriate treatment and thus prevent the propagation of the irritation to the sciatic nerve.

In these cases a real compression may be produced by the inflamed muscular fibres, a compression analogous to the one observed in cases of tumor or foreign bodies pressing on the same nerve. I have had to treat, and with success, a certain number of cases in which I have only used massage on the muscle proper without paying any attention to the nerve. In one person among others, laid up for six months and in whom all classical means had been employed, I was able to obtain by this procedure alone complete cure in less than five weeks. In this case the sciatic nerve did not present more than the physiological sensitiveness on pressure, but pressing on the muscle in the neighborhood caused the patient to scream out loud, leap up in the air to the great surprise of the patient himself and the physicians who were called in consultation.

Myositis as well as sciatic neuralgia itself, may be acute, and then chronic, or appears to be chronic, from the very onset (chronique d'emblée).

This peculiarity is most often unobserved and, nevertheless, plays an important part as regards the treatment. How many cases of sciatica remain uncured, because one has not taken into consideration the possible presence of a myositis, developed in the neighborhood of the nerve. Moreover, it is well to remember that this muscular inflammation may exist at the beginning, only in the form of a simple puffiness, hardly perceptible and slightly sensitive to touch and quite frequently very difficult to detect to a non-practiced finger. It is then when a rapid and permanent cure may be obtained.

## OBSERVATION XX.

*Deposits of Chronic Myositis Confined to the Fleshy Parts of the Gluteus Medius and to its Insertions.—Atrophy of the Gluteal Muscles.—Massage.—Cure.*

M. T., native of the United States of America. This patient, who is rather corpulent, was sent to me in June, 1887, by a physician of Cincinnati, with the diagnosis of sciatica of the left leg. In April, 1883, while crossing the ocean in damp and cold weather he was seized by a violent pain with its maximum intensity in the left gluteal region, and radiating along the leg to the toes. A physician on board diagnosticated sciatica. Injections of morphia. Nevertheless the rolling provoked dreadful pains.

Various treatments among others cauterization (Paquelin). Cured after a fortnight. Nothing but vague, indefinite pains now and then in the left hip, until September, 1886, when he had an attack almost as violent as some years ago. This attack confined him to his bed for 6 weeks. After that, feeling a little better and being able to walk about a little by the aid of a stick, he went over to Europe. In this condition I saw him in Paris, in the early days of December. He complained then of the usual symptoms of sciatica. The pain now, more acute than formerly, started in to the region of the hip, and also radiated along the entire course of the nerve down into the toes.

The muscles of the left gluteal region are atrophied and flabby; the gluteal fold is almost effaced. In the body of the gluteus medius, an induration of the size of a pigeon's egg is found, which is of an almost cartilaginous consistency. Another one, also rather hard and of the size of a walnut corresponds to the upper attachment of this muscle. No pain on pressure along the course of the sciatic nerve, except at its exit from the pelvis. This pain is only slight, and cannot be compared with the sudden and spontaneous pains which the patient experiences at times.

Massage of the atrophied muscles; much more powerful on a level with the indurations; active movements to which resistance is opposed. Treatment relatively well tolerated. After 2 months the patient is able to take long walks without getting fatigued. and without feeling any pain. The muscular indurations nearer to the trochanteric attachment of the gluteus medius has disappeared since three weeks; as to the second one, seated at the upper insertion of the gluteus medius, very little is left. Atrophy almost gone.

I received word from him in February, 1888, that the cure persisted.

## OBSERVATION XX.

*Obstinate Sciatica on the Left Side.—Sacro-Lumbar Myositis.—Massage.—Cure.*

M. T., colonel, 53 years of age, complains for the last 6 years of a pain in the lower lumbar region, on the left side. He dragged his leg and got tired very easily. Violent lumbar pains during rotative movements of the trunk. Since 16 months the pain has radiated into the

right gluteal region, into the posterior parts of the thigh, and along the fibular region to the ankle. The patient is from time to time confined to his bed for days without being able to sleep, impossibility of sleeping on the left side. Continuous current without results. Cauterization along the sciatic nerve; last October temporary relief. Stretching of the nerve proposed, but refused.

Such was his condition in the beginning of January, 1882. Walks with difficulty with the help of a stick; drags his leg. Violent pain on pressure along the entire course of the sciatic nerve, and especially at the point where it emerges from the pelvis. In the thickness of the gluteus medius, in the vicinity of its upper attachment, I find an induration of the size of a walnut and ill defined. Violent pain on pressure on this tumor. The buttock markedly atrophied; besides, very flabby to the touch. The muscles on the post region of the thigh are in a state of a slight retraction. Impossible to stretch the leg.

Petrissage of the tumor, of that portion of the sciatic nerve situated along the gluteal region and the thigh; also of all the gluteal muscles. Disappearace of the induration after 6 weeks. Treatment of the other parts is continued; amelioration and cure after 2 months. Sensitiveness has almost disappeared; stretching of the retracted muscles is performed. Complete cure after 3 months. The leg has regained its strength. The patient only experiences some weakness after walking a great distance.

I have had to treat, during more than twenty years of practice, about one hundred and fifty cases of sciatica, sometimes accompanied by gluteal or gluteal and peroneal myositis, sometimes not, and very few are the cases in which I have failed.

§ 0.—*Massage in Affections of the Organs of Special Sense.*

*Diseases of the Eye.*—It was Donders who at first introduced the treatment of eye diseases by means of massage at the opthalmological London Congress in 1872. Two years later Mr. Heiberg in an article read before the Medical Society in Christiana, mentioned the Dutch opthalmologist's communication, which had remained unpublished. Heiberg believed that good results might be obtained in irregularities of the cornea from therapeutical manipulations if properly performed. Then came Pagenstecher, who was himself an advocate of the method, and laid down precise rules as to its application. He also tried to give the indications for it[1].

(1) Pagenstecher. Archives für Augenheilkunde, Bd. X, p. 225.

In France this mode of massage was adopted as early as 1880 by Mr. Panas; and his pupil, Damalix, mentioned the good results he had obtained in a work published a short time afterwards[1].

Other well known specialists have published observations and more or less interesting investigations on the subject. Among these we only mention Gradenigo, Chodine[2], Klein[3], Just, of Zittau[4], Pedraglia[5], Vicherkiewicz[6], Schnabel[7], etc.

Massage has been used in catarrhal, phlyctenular and granular conjunctivitis; in interstitial keratitis; in iritis and episcleritis; in glaucoma; failures and ameliorations have been obtained, radical cures but rarely.

From what I gather from my own personal impressions, it seems to me that the method applied alone has very rarely had any curative action. It seems rather to aid other medications and in virtue of this deserves to be preserved. Having no experience in regard to this, I cannot pretend to decide the question; this task belongs to the oculists.

Mr. Abadie, who was aware of the attempts made to treat writer's cramp by massage, has used it in blepharospasm. In 1882 he published a case in which he obtained success. It is not at all inconvenient to follow his example. The indication is apparent; it is probable that the method, applied in time and with perseverance, will give results comparable to those obtained in a great many other spasmodic affections.

*Diseases of the Ear.*—Aurists have followed the example of the oculists; they have used different manipulations in diseases of the outer ear, the eustachian tube and the middle ear. I shall only mention these attempts.

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(1) Damalix. Archives d'ophtalmalogie. t. I.

(2) Chodine. Centralbl. für Augenheilkunde, 1880, p. 173.

(3) Klein. Wien. med. Presse, 1882, Centralbl. für Augenheilkunde, 1880, p. 173.

(4) Just, of Zittau, same paper, 1880, p. 3.

(5) Pedraglia, same paper, 1880, p. 3.

(6) Vicherkiewicz. Wien. med. Blätter, 1882, p. 676.

(7) Schnabel. Deutsche med. Wochenschrift, 1889, p. 23.

## CHAPTER VIII.

*Massage in Affections of the Circulatory Apparatus.*

Massage has been advantageously employed in heart diseases in order to facilitate the venous circulation, to diminish the œdema, and in this way give the patient some relief. It has also been used in angiomata and varices. The results, without being brilliant are worth mentioning.

I have formerly applied it in voluminous, superficial and deep varices of the lower extremities. It seemed to me as if the results had been more favorable in the latter than in the former cases. But the treatment requires a great deal of time and patience both on the part of the physician and the patient. Relapses, after a greater or shorter period, are not rare. Starke and Beuberger have employed it in varices and scars left by varicose ulcers.

Lately, varicose ulcers have advantageously been treated by massage. Several persons have spoken very highly of it, but it was especially Gunther who so neatly discussed operative interference in his important article published in 1891 under the title "Rational Treatment of Varicose Ulcers."

Massage has been advised in *phlebitis*. I entertain no such opinion. You may proceed as gently as possible, but you are always liable to break up the coagulum, have it enter the blood current and thus sow the seeds of embolism. The result obtained, however satisfactory it may be, does not balance the danger to which the patient is exposed.

If I am strongly opposed to massage in phlebitis at the first stage of the disease, I do not regard it unfavorable when the thrombus has become organized and formed an intimate

union with the wall of the vein. Never before three months have elapsed since the acute stage of the disease are we allowed to resort to massage.

In strictly observing these rules of precaution we shall not be exposed to those accidents which occur, so much the more as we can avoid to touch the lesion proper. The object of the treatment is not to act upon this spot but to stimulate the circulation in its neighborhood, so as to have that most troublesome œdema disappear.

In proceeding in this way I have treated several cases of the kind, without having the slightest accident and with almost always satisfactory results.

*Angioma.*—More than thirty years ago Velpeau remarked that ecchymoses or sanguineous swellings disappear rapidly under the influence of massage.

It is the same principle of scattering the effusion before it has solidified and thus accelerating local absorption. Mezger used it as a posteriori. He thought that what succeeded in ecchymoses might also do so in angioma.

## CHAPTER IX.

*Massage in Affections of the Digestive Tract and its Adnexa.*

The mechanical phenomena of digestion are important enough to allow us to suppose that a physical agent like massage, capable of increasing muscular contractions, must more than once have been of great service in gastro-intestinal disorders.

In reality massage was at first used as an excitant of the peristaltic movements. Percy, Laurent, Georgii and Recamier recommended it for this purpose.

These ideas have long been embraced in France, Germany, Russia, and in the Scandinavian countries.

Abdominal Massage is used in affections of the digestive tract and its adnexa. Piorry advised two manipulations for the abdomen, which are still in vogue, namely, friction and petrissage. Theoretically, massage is extremely simple, practically it requires precautions which often render its employment very delicate.

Some of my colleagues have complicated by adding various and very odd movements to it. I have done my best to simplify it and I have never had reason to complain. Every case demands slight modification of the usual procedure. This peculiarity does not alone belong to the intestines; we have already mentioned it in regard to the joints, the muscles and the nerves.

*Chronic Constipation.*—My method of procedure is as follows: The patient is placed during the greatest part of the séance in the dorsal position, his head slightly raised and the legs bent. His position must be such that the lumbar curvature is not too great, otherwise the viscera in pressing against

each other augment the tension of the abdominal wall. The patient ought to breathe quietly; one tries to attract his attention and make him speak if possible. If he is excited and attentive to the manœuvres he will breathe poorly, if not, respiration is nearly always free.

Massage ought to act on the intestines themselves. To accomplish this we must try to overcome the resistance offered by the abdominal wall, which is often contracted on the slightest touch. This is easily done in thin persons; in corpulent, and particularly in nervous individuals, whose abdominal wall is more firm and sensitive, it is more difficult. In these cases we must take the same precautions which I have indicated in regard to massage of the uterus and which I intend to develop later on. Patience, firmness and gentleness are especially indicated in those who undertake the treatment of the abdominal organs by massage.

I have many times seen how practitioners, even those high in the profession, believed, during massaging, that they had the big intestine between their fingers, when in reality they had nothing of it, or only a very small segment. What they had taken hold of was only the abdominal wall, which was submitted to massage (you can imagine with what effect). In ordinary pneumatosis of the colon this manipulation is still more difficult.

Daily séances of a quarter of an hour or twenty minutes are necessary. It is rare after a four or six weeks' treatment for the expected result not to be obtained. In some cases, however, this result is only obtained after two or three months. If the conditions are good at the beginning the amelioration is rapid. I have sometimes noticed improvement after two or three weeks; yes, I have even seen cases in which, after the first séance already the patient had a movement of the bowels[1].

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(1) In January last year (1895) I had to treat a lady suffering for about 10 years from obstinate constipation. She had at two different times been massaged by Swedish gymnasts without the slightest effect.

Some authors speak of habitual constipation depending upon flabbiness of the abdominal walls. It is especially observed in multipara whose confinements were so near each other that the muscles, distended by the enlargement of the gravid uterus, could not regain their natural tenacity. I believe that atony of the intestine and its consequent dilatation through gas play in these cases a more important part than the rest.

I have treated constipation accompanied by considerable meteorism in nervous individuals, especially in hysterical and hypochondriacal persons; the results have generally been satisfactory. Relapses are more frequent in this than in other kinds of constipation. This is easy to explain, because the real cause of the anomaly, instead of being local, has its seat in the nervous system. As long as the latter has not returned to its normal state all sorts of manifestations may be produced. Even partial cure or transitory improvement obtained in these cases must not be despised.

Massage seems to me to work in the following way in constipation: First—The contractions of the abdominal walls produced by manipulations, contribute to the propulsion of the faeces. Second—The peristaltic action is increased by reflex contractions of the intestinal muscular coat. Third—The acceleration of the lymphatic and venous circulation, the hypersecretion of the bile and the pancreatic juice which is stimulated by massage, they all contribute to increase the quantity of intestinal liquids. Fourth—The accumulation of fæces is broken up and thus their propulsion is hastened towards the rectum. Very often the healing persists after the treatment, but it is sometimes necessary to begin it anew after a shorter or longer time. I have met with some obstinate cases. In nearly all of them there was slight paresis consecutive to peritonitis, neurasthenia or hysteria.

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After only a fortnight of treatment action of the bowels; in six weeks, cure. In the middle of last September I heard from her daughter that the favorable result persisted.

In most of the cases the treatment of the big intestines, viz., small intestines and particularly its lower part is quite sufficient to produce a persistent action of the bowels, the peristaltic movements of the sigmoid flexure being communicated to the rectum. But there are cases, rather more exceptional, in which massage of the colon alone does not suffice to produce a stool. As we cannot, even when the physical conditions are favorable, arrive at massaging the rectum, we may in these conditions have recourse to another procedure in an indirect way to restore to this part of the intestine its contractile power. We have to resort to forced dilatation of the anal sphincter, not to the surgical degree, but to much milder degree, so as to allow the patient to get up and walk about some moments later.

I have several times tried this method and almost always with success. I ignore the physiological effect produced by this kind of forced dilatation, but I believe it is acting in a reflex way on the muscles of the rectum situated higher up. For persons who will not submit to this trifling procedure there is no other way to do than to resort to enemata, which are always to be regarded as quite an inoffensive thing.

I always perform massage of colon in beginning at its origin, on a level with the coecal region, and I advance towards the rectum. A part of the circumference of the wall of the colon is seized between the thumb and the other fingers and is submitted to petrissage. These manœuvres are not applicable to the deeply seated coecum and sigmoid flexure which, moreover, are deprived of a mesentary or possess only a short one; these can only be acted on by friction[1].

It is of great importance to try to take a fold of the abdominal wall as big as possible in order that you may be sure to seize an important segment of the colon; besides you have

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(1) The sigmoid flexure is almost always the seat of predilection of constipation.

to work obliquely to its direction. In performing abdominal massage you must work above all with your thumb. If it is not strongly developed, you don't achieve any results except in cases, where the intestine in question is very easily accessible. You begin the séance by placing the patient in a dorsal position; but as you approach his left side with your fingers, it is advantageous to have him change his position and lie on his right side. In this way the small intestines, thanks to their weight, fall over to the other side, the left side is more or less liberated; in this way you are able to reach much deeper into the pelvis with your finger. This will render massage easier and less painful.

I then perform rather energetic frictions with the thumb along the big intestine in order to favor the propulsion of faeces towards the rectum. The sitting ends by petrissage of the whole intestinal mass with both hands and by tapotement.

Of the different effects I believe that the most persistant, if not the most energetic one, is the action produced in a reflex way on the smooth intestinal muscle fibres. They are often forced to contract, owing to indirect mechanical irritations. This restores in part their tenacity and a slight excitation, such as is produced by the passage of faecal matter, causes peristalsis, which would never have happened in the former state of atony.

Obstinate constipations are at all periods of life the most categorical indications for massage; in children massage produces excellent effects. In these the constipation has most often its seat in the lower part of the big intestine; I have often caused it to disappear by massaging the colon. The application of the procedure in children requires extreme precautions; at the beginning infants may be massaged while they suckle. When I have to treat older children, I advise the parents to provide themselves with sweets and to bring along a lively and talkative companion, who will attract their attention; otherwise all reasoning with them to relax their abdominal muscles will be useless.

There are some people who believe that they can get rid of their constipation by rolling heavy cannon balls over their belly for from ten minutes to a quarter of an hour every day (method of Sahli) or in lying down on some of the machines that form a part of Zander movement cure and which work in about the same way. I think they are quite mistaken. These mechanical means may produce an action of the bowels as long as they are employed, the faeal matters being pushed on and bound to escape in the direction of the least resistance. Massage, on the other hand, restores the contractive power to the atonic bowels and produces not only a momentary evacuation, but above all cures the constipation for ever or for a longer or shorter time.

The prolonged presence of faecal matters in the intestine often causes real putrifaction of its contents, formation of flatus and microbes of a diverse nature as toxines, ptomaines, etc. These noxious matters may be absorbed and provoke a real general intoxication, being manifested under various forms. Several cases of this kind were treated by me and I will relate two cases which will prove it in a most evident way.

## OBSERVATION XXI.

*Obstinate Constipation, Dating From Infancy, in a Child 6 Years Old.—Massage.—Cure.*

B., a 6-year-old girl from Boston.—According to the history given by her parents, she has been suffering from constipation since she was born. Up to 3 three months of age she had regular stools by giving her enemata. Since that time this procedure was no longer sufficient. They were obliged to administer to her by the mouth a great many laxatives and purgatives of the American pharmacopea. Lately they resorted, though without much success, to refreshing alimentation and consisting principally of groats. Last year, after having had but one stool during 3 days, she was seized by convulsions which lasted 24 hours, and which the physicians attributed to a fæcal accumulation in the colon. These convulsions ceased after emptying the bowels by an energetic purgative. The same attacks occurred several times, although less violent, and they ceased by resorting to the same means.

I saw the child in Paris in November, 1888. After having related to me all these details, the mother added that her little daughter, generally reserved and almost sullen, isolated herself as much as possi-

ble, and never took part in other children's plays. She was not, as she expressed it, like other children.

I tried massage, but without promising anything like a brilliant result. In the beginning it was rather difficult. On the slightest pressure of the hand the rectus abdominalis would contract energetically. I only directed my attention to the abdominal wall. After a fortnight, I succeeded in diminishing its sensitiveness, so that now I was ready and able to massage the big intestine itself. A fortnight later regular normal stools, without the aid of enemata or purgatives. The treatment is continued for a month. After this time the child was able to go to the toilet regularly at almost physiological intervals, without being obliged to have recourse to artificial means. No more convulsive seizures.

The child's character has quite changed. As the function of the intestine was improved she became bright, lively, and no longer like her former self. Two slight relapses, a few months later, were easily overcome by massage, and her cure has remained permanent up to date.

## OBSERVATION XXII.

*Chronic Constipation.—Massage.—Cure.*

Miss R., singer, 28 years old, native of Hungary, complains of constipation almost since her childhood. For the last two years it has especially been obstinate and annoying. She attributes this aggravation to her catching cold at about that period. Without enemata she only goes to the toilet every 3 days. No local pains. Little by little she has lost her appetite, has become thin. Her complexion has changed and become cadaverous-like. The tone of her voice has also little by little, become altered. All these changes she attributes to the constipation. She has become downhearted and melancholic. A physician from Vienna ordered a cure at Marienbad; the result of it was extremely unsatisfactory. In the night, cold water compresses were applied to her abdomen with no more effects.

She came to see me in December, 1888, greatly emaciated. The walls of her abdomen extremely supple; her case is particularly well adapted for massage.

Evident improvement after 3 weeks of massage. Her menses come on at this moment and seem to defeat all success so far obtained and to reduce her to her former state. Disheartened, she gave up the treatment; but a little while later, the immediate effects of the menses being over, the amelioration reappeared. She then renewed the treatment. It was continued for two months and a half, and only interrupted during the menstrual period, and in the course of a temporary indisposition which lasted 12 days. Formerly the fæcal matters were hard and had the shape of small balls; the stools were attended with violent pains, so that she really dreaded to go to stool. Since the cessation of massage the tenesmus has disappeared. I saw this lady again in July, 1890. Her bowels were regular, moving almost

every day since the end of the treatment. The fæcal matters are well formed and of normal consistency. Her appetite was satisfactory. The former beautiful complexion, as well as the tone of her voice, have returned. She has gained flesh, and this great improvement of health seems to have completely banished all gloomy ideas.

It is especially at a late period of life that constipation is frequent and serious. Intestinal paresis is not at all rare. Thanks to the inactivity of the muscular coat, real obstructions are produced. If the retention is not absolute and the patients have somewhat regular stools, one is very apt to mistake the nature of the trouble from which they suffer. Professor Lasegne, in one of his last lectures referred to a case in which an intestinal obstruction of faecal origin was mistaken by the first clinicians of the period for an intra-abdominal tumor. I have also treated a patient in whom the examination at first made me believe it was a fibrous tumor I had to deal with.

### OBSERVATION XXIII.

*Intestinal and Slight Palsy in an Old Person.—Accidents of Intestinal Occlusion.—Purgatives, Enemata, Without Any Success.—Massage. —Breaking up of the Intestinal Masses After a Week.—Continuation of the Treatment.—Cure.*

M. R., 66 years of age, an Englishman, very robust, declares that his health would be excellent if he had not suffered for several years from obstinate constipation. He sometimes remains several days without going to the closet, and in these conditions he almost always feels violent abdominal pains. When I was asked to come to see this patient at the end of March, 1889, he had not had any passage for a week. Early in the beginning of this trouble he had only felt slight intra-abdominal pains; no vomiting; he could walk and work as usual. Laxatives (Morrison's pills), as well as enemata; this time without any effects. Four days before I saw him he was seized by violent abdominal pains, referred to the left side of the abdomen, and especially to the middle towards the umbilical region. As his condition began to become alarming he called in a physician, who administered castor oil to him in rather large doses. This purgative was immediately vomited; enemata, administered by means of a long India-rubber tube, produced no effects either. It is at this moment that massage is advised. When I saw this patient for the first time he gave me all the details which I have just related, and adds that for 4 days he vomited everything he took; that he has not been able to keep anything on his stomach except ice cold milk, and this only by taking very small quantities at a time. Raw meat, boiled eggs, and other easily digested foodstuffs, were directly vomited. Nausea, but

no vomiting, except at the ingestion of food. He cannot sleep at night, complains of great lassitude in the morning.

Slight swelling of the abdomen. Sensitiveness on pressure along the transverse and descending colon, especially in the umbilical region. One can distinctly feel through the abdominal wall a cylindrical mass. Two other voluminous masses seem to fill the colon in its descending portion, and particularly in the left side. This intestine seems very much distended. By rectal examination I find an enormous, very hard mass, situated in the left iliac region. The hardness was such that for a moment, I believed I had to deal with a sarcomatous or epithelial tumor of the intestinal wall, or perhaps a fibrous tumor, which originated in the pelvis, and which, having been displaced, had produced the intestinal occlusion by compressing the rectum or the iliac portion of the colon. A more careful examination revealed that it was a fæcal mass whose accumulation had been produced by a paresis of the intestine, as is often met with in old people. Massage. I began with the parts nearest the rectum and I proceeded towards the caecum. The procedure was rather painful. I was not able, in spite of the efforts I made, to apply to the fæcal mass the strength and energy which seemed necessary to me. Towards the end of the second day (after 4 sittings), the patient had not yet had any passage, only some scybala in the morning. On the third day, the sensitiveness of the abdominal wall having considerably diminished, I was able to push the hand rather deeply towards the fæcal mass. That day the patient had, a few hours after I had seen him, violent colicky pains, followed by breaking up of extremely hard fæcal masses of a repulsive fetor. There was in the first stool enough to fill an ordinary vessel. The colics and the large passage which followed exhausted the patient considerably, but this period of weakness was followed by a state of comfort which was permanent. The appetite soon returned. The strength increased visibly 3 days after the breaking up of the masses, another passage after an enema. Fearing that a similar condition of intestinal paresis to the one he had suffered from might again be produced, I advised the patient to be massaged for several weeks. He agreed to this. Daily massage during this time. Normal passage almost every evening. I received word from him in January, 1890, that the cure persisted.

Slight disorders of the stomach sometimes disappear when massage is performed to remedy constipation. For several years I have always resorted to simultaneous treatment of the stomach in these circumstances.

All those who have had to deal with intestinal massage consider intestinal ulcers as contra-indications. They fear perforations that might be provoked by applying the method; I believe they are right. It is useless to add that pregnancy

also forms a contra-indication; I know women in whom abdominal massage was performed during the first months of an unsuspected pregnancy, and who went to full term; but we must never rely upon such happy terminations.

Remains of *appendicitis* are a more frequent cause of constipation than is generally believed. Hünerfauth has found them in 15 per cent. of his cases. After these diseases there remains an atony of the caecum which also extends to a large part of the transversal colon. As a real, earnest effort is necessary in order to produce the propulsion of the faecal matter, this atony is the cause of its stagnation and constipation. It is at this point that the muscular fibres of the intestine have a more considerable obstacle to overcome. If there are neighboring adhesions of the cicatricial bands, which more or less diminish the size of the caecum, we must not be astonished in being confronted by one of those obstinate constipations in which most remedies are of no avail.

We must massage very carefully and with great precaution. Roughness in massaging causes violent pain, and we are liable to set up an inflammatory reaction that might be dangerous. It is necessary to proceed in a very gentle way; if we do this, the muscular coat of the colon will regain its contractibility; relatively extensive adhesions will be absorbed. We must never despair, although it may be long before an effect is produced. Adhesions may be expected to be absorbed, if the acute attacks have not subsided for more than two or three months. During this interval their organization cannot become complete, they are almost never fibrous. Constipation in most cases is cured by removing them. In order to facilitate this result I nearly always take care to massage the colon at the same time.

In some cases of *enteralgia*, which seemed to be idiopathic, I have succeeded in obtaining absolute cure. Nearly all of the patients were young and nervous women. At the beginning I proceeded very gently and, thanks to this precaution, the patients were soon able to bear the manipulations rather well.

The total duration of the treatment was from six weeks to two months. In one of these patients, a young Swedish singer, exacerbations of enteralgia occurred day and night. She always complained of great weakness after them. The patient, who had previously been in good health, resorted to various treatments, among others hydrotherapy and electricity, but with no results. After one week's treatment by massage, she felt better and after six weeks she was cured. I saw her five months after the treatment and she had had no relapse.

I have also treated *chronic diarrhœa* by massage; generally the results are tardy. Out of eight cases I obtained a cure in six after two months; in three of these cases there was a relapse after five, six and eight months resp. Massage began again at this moment and two of them yielded only temporary results.

In the autumn of 1894 I had two really brilliant cures and which at this moment (end of September 1896) still persist. In one of these cases the patient suffered since more than four years; he had nearly every day from three to four liquid stools, not preceded by any pain. Sometimes he was not even left quiet at nights. After a fortnight already he felt an obvious amelioration and when after six weeks he stopped treatment, the patient had not had any diarrhœal stools for the last three weeks.

We know, and I have already stated it in my "Traité du Massage," that, if massage yields good results in some cases of nervous gastralgia, it is on the other hand often insufficient or even useless in *chronic gastritis* and in affections presenting a real alteration of the walls of the organ.

This want of success is easily explained if we consider on the one hand the deep situation of the stomach and on the other the slight resistance of the deep plane on which it rests.

On account of these different causes one is able to massage only a very limited portion of the anterior wall of the stomach, the rest withdrawing under the pressure or not being reached because of its distance from the abdominal wall.

In a certain number of cases, however, I have obtained amelioration or even definite cure, but in almost all of these the thinness of the abdominal wall and of the skin and the flattening of the thoracic cage allowed me to seize the diseased organ without too much difficulty—physical conditions which are very rarely realized.

I have wondered if it would not be possible to place the patient in such a position that the stomach might become, as does the intestine in the genu-pectoral position, easily accessible to the hand.

Massage of the stomach is ordinarily performed with the patient in the dorsal position. About three years ago, finding myself in the presence of an invalid with a very thick abdominal wall, it occurred to me, in order more easily to seize the organ, to make him lie on the right side, the left going beyond the vertical plane.

I was then astonished at the facility with which I could seize and massage the stomach. The organ entrainé by its own weight fell, if I may say so, into my hand ready to undergo the different manipulations that I wished to perform.

To this way of operating the following objection has been made: The object of massage being to make the aliments circulate from the cardia to the pylorus, is not the contrary effect obtained by massaging from the pylorus to the cardia? To this I answer that the object of massage is not only to make the aliments circulate in the stomach, but also and above all to restore the tone of the muscular fibres of the organ, and, these fibres being circular, the direction of the pressure is a matter of little importance. Finally we end by a new massage in the dorsal position by driving the aliments from the cardia to the pylorus.

The following is the exact modus faciendi. The patient is placed on the right side, with the legs bent, and petrissage is performed on the stomach with both hands, alternately, from the pylorus toward the cardia, dwelling for some time on each of the regions of the organ, as one does for the colon in cases of

constipation. The breathing ought to be free and the meal to have been taken a few hours before. One has indeed wondered whether massage performed during the digestion did not delay this physiological act, but the experiments of Gopadze and especially those of Dr. Beulet[1], of Berne, have on the contrary proven that the accelaration imparted by massage to the persistaltic movements and the increase in the production of the gastric juice through the excitation of the glands stimulates the gastric function. The duration of the digestion can thus be diminished by more than an hour. The aliments remain then for a shorter time in the stomach, they are better assimilated, and the best proof that we may give thereof is the diminution of the quantity of faeces, a diminution that is great enough to frighten some patients[2].

Another advantage of performing massage two or three hours after the meal is the avoidance of the rippling noise which is so unpleasant to the patient and which is almost always produced, especially if there is the slightest dilatation of the organ.

Generally, after a few sittings, the patient gets accustomed to the treatment, and one is able to massage easily. In very unfavorable cases, that is, when the integuments or the organ are very sensitive or the patient very pusillanimous, one is obliged to use great gentleness during the first five or six séances in order to let the unpleasant contusional sensation pass away before beginning the definite petrissage.

The amelioration most often shows itself by the return of the appetite, then follow very rapidly the disappearance of the spontaneous rippling, the eructations, the gastric pains, the cephalalgia, the vertigo, etc., in a word, all the symptoms of gastric affections.

The sittings ought to last about a quarter of an hour when

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(1) Beulet. Correspondenzblatt für Schweizer Aerzte, March, 1888.

(2) Last year an elderly lady got so frightened at the diminution of her stools that she asked me if a part of her fæcal matters did not hide itself somewhere in her belly.

one has to treat the stomach exclusively, but most often the different diseases of this organ are attended with constipation and it is necessary to massage the intestine at the same time.

What is really the action of massage?

It is a double one. Massage acts at the same time on the muscular tone and on the secretion of the glands of the organ.

It acts on the muscular fibres of the stomach causing their atony to disappear, the same as it acts on the muscles of the intestines in the treatment of constipation.

Its action on the glands is equally obvious. The recent experiments of Dr. Colombo, of Turin, although they relate to animals only, show perfectly well that massage stimulates the glandular secretion of the stomach. Dr. Colombo made gastric fistulæ in dogs on which massage had been performed and noted a marked increase of secretion.

He concludes from these experiments that massage acts on the glands by a twofold process; on the one hand it stimulates the working of the glandular epithelium; on the other it determines to the organ a more abundant afflux of blood, which favors the filtration.

Besides this special action on the gland itself, the secretion of the gastric juice is also increased through the accelaration imparted to the peristaltic movements by the first and last period of massage. This action is immediate, and one not rarely sees dyspeptic persons relieved after the first days of treatment by massage. They say that they feel lighter, their "food is no longer on the stomach." Nevertheless, we must prevent as much as possible the patient from taking too large a quantity of food at the beginning of the treatment. During the first days he must submit to a diet, and little by little he is brougt back to his habitual regimen, suppressing, however, any indigestible aliments he may have been using. This return to the habitual regimen is only resorted to according to the indications given by the general state of the patient, and it is more or less rapid, according to the case.

We must also notice the results which we obtain in *dilatation of the stomach.* I do not believe that this disease is as frequent as it is generally said to be. Bouchard, who has given an excellent description of it, says that writers have too often called by the name of "dilatation" affections which were nothing but simple gastralgia, or chronic gastritis, and in this view we may see dilatation everywhere. On the contrary, we shall find that the number is much more limited, if, besides surgical cases, which we have not to occupy ourselves with here (polypus, cancer, etc.), we consider the idiopathic form of dilatation.

In this kind of dilatation one often obtains excellent results by massage.

I have noticed sometimes in these cases relapses. It is not so in the dilatation of the stomach consecutive to a chronic gastritis, in which the production of flatus in large quantity results in a mechanical distention of the walls, a distention which is soon removed by massage. The gastritis which is the cause thereof, disappears at the same time, and the results are most favorable.

Only one thing is to be regretted, and that is that this affection is not sooner submitted to our treatment. We are consulted only when the muscular tunic has undergone considerable alteration because of the prolonged distention of its fibres. Besides, this great dilatation explains the necessity of submitting the patient to a restricted diet, so that the wall of the stomach may become more supple, and consequently more easy to reach. In the contrary case the hand slides, as it would on a bladder filled with water or air.

In *dyspepsia,* which by some authors is considered in a particular class, but which I regard as simply due to chronic gastritis, massage renders great service, and it is not rare to see the patients relieved after only a few sittings.

*Gastralgia* may be divided into two classes: essential gastralgia and that which is dependent upon a diathesis (anæmia, neurasthenia, etc.). These last conditions, although they derive

good effects from massage, are only completely cured when through appropriate means the cause which produced them has been removed. As to essential gastralgia, I have rarely seen it resist a massotherapeutic treatment, and, strange to say, what is often met with in neuralgia of other parts of the body, it is frequently after the second or third sittings that the patient begins to feel relief.

I might cite among others the case of a young lady who had suffered for a certain number of years from violent gastralgia, and who was cured after relatively few sittings of massage. I saw her two years later. She had not noticed any return of the symptoms of her disease.

Finally, in *cramp of the pylorus*, which is an affection rather difficult to diagnosticate, and, besides, not frequent, I have also performed massage with entire success. The cramp of the pylorus most often attends chronic gastritis. It is an affection, which is frequently produced at regular hours, principally during the night, and which ceases only when the contracture of the muscle has at last yielded and allowed the flatus which accumulated in the stomach to pass. It is a very painful disease, and above all destined to transform the existence of the patient, affected by this unfortunate trouble, into a real martyrdom. All treatment, except massage, has thus far proven powerless against this most obstinate and stubborn affection. And this may be the reason that operative interference has been recommended in these cases. This failure of any treatment induced Dr. Doyen, of Rheims, two years ago, in a communication treating of this subject and addressed to the Academy of Medicine in Paris, to speak very highly of and to advocate his operative procedure. The cramp of the pylorus is often confounded with other gastralgia; it is especially important to differentiate it from the pyloric crisis that attends the ulcers or tumors of this orifice, because in the latter massage may be dangerous.

We have already alluded to the danger arising from the application of massage in intestinal ulcers. The employment

of massage in the presence of ulcers of the stomach, if no adhesions to the neighboring organs have formed, may also be the cause of perforation with its necessary consequences. It is therefore of paramount importance, before resorting to this treatment, to arrive at a positive diagnosis in order to exclude the presence of the affection mentioned.

### OBSERVATION XXIV.

*Chronic Gastritis.—Secondary Dilatation of the Stomach.—Cramp of the Pylorus.—Massage.—Cure.*

Mr. K——n, 46 years old, composer of music, suffers since 1873 from a chronic gastritis with a tendency to flatulency and secondary dilatation of the stomach. Spent every year for a season at Vichy, after which he felt some relief, but it never persisted more than 5 or 6 weeks. Alternately better and worse until about the end of 1888, when the patient became subject to exceedingly violent attacks. These attacks came on once or twice a week (lately still oftener), had their seat in the region of the pylorus, whence they radiated upwards, but especially down the abdomen, so that the physicians believed him to be suffering from hepatic colic. While these colicky pains lasted the entire abdomen was swollen and the patient from time to time had belching of very acid and badly smelling gas. The attacks came on with predilection in the evening, a few hours after dinner, and lasted from 3 to 4 hours. They stopped almost suddenly, producing a sensation of extreme relief. The following day the patient felt very tired and downhearted.

He took bicarbonate of soda in very large quantities, naphtol, etc., without any effect. During the attacks poultices saturated with laudanum.

The stomach often refused to digest anything, in spite of a strict and especially monotonous diet; the patient was obliged to eat every day the same things and to assimilate food which long experience had proven to be easy of digestion.

Being unhealthy, he got thin and easily tired, and could not work for any length of time.

While the disease lasted, obstinate constipation which obliged him to use almost daily either laxatives or enemata.

Treatment by massage for 6 weeks, began in the early part of October, 1894. In the middle of the treatment a violent attack, but up to this moment, that is May 12, 1895, he has not had a single relapse. The patient eats everything, complains of no pain in his stomach, only a slight sensation of heaviness in the epigastric region after a copious meal.

After 5 days of treatment already the patient had a passage, due to the influence of massage. Since this has been stopped the patient is no longer obliged to resort to any remedies, and he has had regular

passages every day. In a letter which I received from my former patient, on June 1 of last year, he says among other things: "The treatment by massage has surpassed all my expectations; it has rid me of those terrible pains which I thought would cling to me for the rest of my life."

## OBSERVATION XXV.

*Chronic Gastritis.—Intense Pain in the Region of the Pylorus.—Constipation.—Nervousness.—Massage.—Cure.*

I think I can do no better than to reproduce here the history of the case as given by the patient herself at my request. She writes to me as follows: Mrs. D., 37 years, from Brooklyn.—In the autumn of 1891 I was first troubled with fermentation and dilatation of the stomach; symptoms gradually growing worse; at times I suffered intense pain, too, in the region of the pylorus, so much so, that in 1893 one of the first physicians in New York pronounced it a contraction of the pylorus and wished to operate. That was not done. I grew, however, worse, could not sleep more than 10 minutes at a time, became very much emaciated, losing over fifty pounds. In 1894 two other physicians were called and they practically agreed in the diagnosis of the first. No operation performed, but strong measures were adopted by the aid of drugs to contract the stomach and prevent fermentation. Artificial alimentation resorted to, resulting in slight improvement.

In the summer of 1895, having gained a little in strength and being able to sleep by means of a narcotic, I was advised to take a treatment at Carlsbad. After a course of treatment, the physician in charge there, Dr. Kraus, sent me to Ragatz and Dr. Norstrom for massage. There I took fifteen séances, resuming them, when Dr. Norstrom came over to America in November, last year. I then had thirty sittings more, making 6 weeks treatment in all. At the end of that time the stomach was perfectly contracted and normal. I began to eat varied food; was able after some time to digest plum pudding; gained flesh to the extent of 30 pounds in 10 months, and am now practically well.

When I saw the patient in Ragatz the summer before last she presented all the phenomena of a chronic gastritis, with passive, secondary dilatation. The stomach, full of gas and winds, was in a perfectly atonic state, having apparently lost almost all contractile power. Sensation of fulness and heaviness in the epigastric region. Eructation of acid gases. Appetite poor. Pains 1 to 2 hours after meal, particularly in the region of the pylorus. Obstinate constipation. Movement of the bowels only every 2 to 3 days, if she does not resort to any remedies. Insomnia. Moreover, she was so nervous that one might have been inclined to believe that her stomach trouble was of functional origin, a consequence of a general disease.

The result of the treatment is what has just been described by the patient herself. The action of the bowels is in a very satisfactory state and the nervousness, with the sleeplessness just spoken of, has almost entirely disappeared.

Some years ago M. Durand Fardel spoke very highly of massage in the treatment of congestions of the liver with increase in size of the organ, what can be their origin[1]. When different medications and particularly the thermal cure have not produced any effect, you may have recourse to massage. I have had some good success in cases of idiopathic origin. When, on the other hand, the congestion and the swelling are only a symptom of a local or general disease: cardial affection, gastro-intestinal irritation, paludal intoxication, etc., one would do better to leave it alone.

*Floating Kidney.*—The treatment of floating kidney by massage was highly recommended many years ago by Thure-Brandt. I admit I was always rather skeptical as to the results when he maintained that the favorable effects observed by him depended upon a strengthening of the ligamentous bands that retain the kidney in its normal position. As these are only composed of peritoneum with connective tissue and vessels (here more or less lengthened), but no muscular tissue, we cannot, of course, speak of a tonifying effect by massage.

It was only a year ago that I began to pay more attention to this subject; after that I heard of the good results Dr. Bum (Vienna) had achieved by this treatment, and thereupon I undertook the treatment in two, I must say, not very unfavorable cases (ladies). As I believe that flabbiness of the abdominal wall, so often observed in cases of this kind, as it does in displacement of other organs contained in the abdominal cavity (stomach, colon, liver, spleen[2]), plays some part in the production of floating kidney, too, I began to massage that first, in order to restore to it its lost tone. After that I applied real succussion resp. trepidation with the fingers in the region of the kidney for ten to fifteen minutes, a treatment which was quite well tolerated. After the lapse of six or seven weeks, one séance every day, I ascertained that the kidney was

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(1) Bulletin général de thérapeutique.

(2) Glenard's Enteroptose.

really fixed higher up than it was formerly and was assured that the patients felt much better now than at the moment when treatment was begun. I heard last summer that they continued to be improved. Mr. Bum believes that through the frequently repeated above-mentioned manipulations subacute, circumscribed inflammations of the peri-renal tissue, perhaps of the peritoneum, too, are set up, which lead to a shrinkage (Schrumpfung) of the peri-renal connective tissue and formation of adhesions to the posterior abdominal wall[1].

Lately published statistics mention four complete, persisting cures out of twenty-three cases treated by him; one remained uncured; in eight, when the treatment could be brought to an end (four to five weeks), the patients felt much better, although he found only a partial anatomical result; as to the four remaining cases, relative improvement, although the affection lasted all the same. At all events I believe it would be advisable, before resorting to operative interference, to try massage, so much the more as it has proved in the great number of cases, which Brandt has treated, to be quite inoffensive.

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(1) Handbuch der Massage und Heilgymnastik, Wien 1896.

## CHAPTER X.

*Gynæcological Massage.* (*Method of Thure Brandt*).

Trustworthy gynæcologists of all countries consider massage as absolutely indicated in several affections of the uterus and its appendages. Weigthy works have been written on it, founded on facts, and it would seem, to say the least, rather bold to doubt their honesty and testimony. Some uterine and pelvic affections, which might perhaps not be cured otherwise than by a bloody operation, can be cured by massage.

I shall here not undertake to give a history of gynæcological massage; those who are interested in its study may consult my treatises on the matter, Massage de l'Utérus, Paris, 1889, and Massage dans les affections du voisinage de l'Utérus et de ses annexes, Paris, 1892.

I believe that, thanks to these publications as well as to my communication to the Academy of Medicine in Paris some twenty odd years ago, I have contributed to the popularizing of a method which at last, after resisting so many contentions, has paved its way to the front. I see abundant proof of this in the great number of French physicians who begin to devote themselves seriously to the treatment in question. They, instead of listening to utterly valueless communications, have begun to investigate the real value of the method, and they now apply it themselves. It is an undisputed fact that especially during the last few years, it has gained ground; although I must admit that among its supporters there are some who are rather timid and have not the courage to apply the proper name to massage of uterus (they call it manuel method, gymnastics, etc.). If these persons by their term have nothing

else in view but to banish the word massage in this connection simply because it does not sound well, then let them do so.

I read with great satisfaction that Prof. Schauta in his recently published work (Lehrbuch der gesammten Gynäkologie, 1896, 1,209 pages) continually and in the most fervent way speaks very highly of gynæcological massage, which he practiced for some years in Vienna, where he occupies the chair of Gynæcology, one of the most important and renowned in all Europe, as he formerly did in Prag.

I am very glad to hear that the highly esteemed colleague of mine, Dr. Netzel, Professor of Gynæcology at the University of Stockholm, who had the opportunity of studying the treatment in question on the very spot where it originated, and who formerly had been rather opposed to gynæcological massage, has of late years become a strong advocate of it. Prof. Netzel, who does not practice massage himself, sends all appropriate cases to the colleague who has made a specialty of it.

I regret very much the early death of Prof. Vulliet at a time when he was about to preside over the gynæcological and obstetrical congress assembled in Geneva last summer. In reproducing here a statement which I came across in his little pamphlet on gynæcological massage, namely: "What I am positive is, that I have chanced to cure by this method many of those patients who wandered from one specialist to another and whom I had formerly treated, though without success, by other methods" I believe to have demonstrated sufficiently both his experience and his opinion on this all important question on massage.

I shall now study the action of massage: First, in affections of the uterus; second, in those of its annexa.

§ 1.—*Massage in Affections of the Uterus.*

*Chronic parenchymatous metritis* may present 1) A period of passive congestion. 2) A period of exsudation. 3) A period of transformation into connective tissue (organization).

It is difficult to imagine the disease confined to one special segment of the organ; the affection is sometimes more marked

on one side than on the other, but we cannot believe in the perfect integrity of the cervix when the body has been affected for a long time, or that the body will remain intact, when the cervix is affected. Is it possible for the fibres of the wall to be intact when an old endometritis that has lasted for some time exists? No. The joint liability resulting from the circulation between the different parts of the uterus is such that it is impossible to isolate one part from the other. If a certain modification is produced in one definite area, it will very soon pass over to the neighboring.

There is no doubt that the whole trouble, when caused by gonorrhœa, arises from the endometrium; something, as for instance after childbirth resp. abortion, the mucous membrane and the parenchyma may be affected at the same time, or the inflammation may pass quickly from the former on to the latter. But at the moment that patients come to be treated by massage, after having vainly tried numerous other medications, the parenchyma becomes always more or less affected; there exists a parenchymatous metritis in the proper sense of the word. If it exists from the beginning is of no importance. It simply contributes to the general phenomena and course of the primary conditions[1].

The manner in which massage acts here is quite analogous to what it does in other muscular tissues of the organism. It decreases the venous stasis, it stimulates the circulation, perhaps more in the uterus than it does anywhere else on account of the importance of the muscular layer whose contractions it provokes (there are some patients who experience the contractions even after the séance). Massage is indicated from a double standpoint in chronic inflammations of the womb, be-

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(1) It is curious to see how many authors have a tendency to say very little on metritis. Even in the latest works published on the subject, Winter, Lehrbuch der gynekologischen Diagnostik, 1896, and in the extensive work of Schauta already mentioned, the word endometritis is mentioned again and again, whereas that of metritis is scarcely alluded to and only spoken of en passant.

cause it regulates the circulation and increases the muscular tone, two important elements in the evolution of the process.

Uterine catarrh, hemorrhages and some forms of dysmonorrhea are especially connected with parenchymatous metritis. I cannot omit mentioning these conditions briefly. And this all the more as they are most favorably influenced by massage.

One of the most frequent symptoms of chronic metritis, resp, endometritis, is *leucorrhea* and the cases where endometritis is not attended by a leucorrhœal discharge are really to be regarded as exceptional. All parenchymatous metritis, of the body and of the neck of the uterus, are followed by venous and lymphatic congestion with glandular hypersecretio of the mucous membrane.

Although I have cured many cases of uterine catarrh as well as other manifestations of the disease in question, I must admit that this affection is one of the most difficult and obstinate to get rid of and, besides, the most apt to relapse. It is generally the last one to disappear. This seems particularly to be the case in those cervical catarrhs, in which the discharges consist of mucoid, tenacious, stringy like and more or less transparent material. I am at a loss to explain this fact. Perhaps it is due to the fact that the secreting membrane is rather deeply situated and it is impossible for massage to act on it otherwise than in an indirect way.

I publish here two cases all the more interesting, inasmuch as they have reference at the same time to sterility and inasmuch as they demonstrate how this affection can also be cured by massage by curing its most frequent cause, namely, chronic metritis, resp. endometritis and the unfavorable soil for development offered by the folds of the diseased mucous membrane to the fecundated egg.

### OBSERVATION XXVI.

*Parenchymatous Metritis (Endometritis).—Profuse Leucorrhœa.—Acquired Sterility.—Massage.—Cure.*

Mrs. P., dealer in wine, 34 years of age, generally enjoying good health. Five years ago delivery was followed by different local and

general troubles. Since that time continual suffering, hypogastric heaviness, so that she cannot walk for any length of time; from time to time dull pains in the sacral region, more violent during the menstrual period. Menstruation is at first painful, but ceases to be so when the period is well established. Leucorrhœa profuse, to such a degree, that, when I withdrew my two fingers, introduced into the vagina after the completion of the séance, the hollow of my hand was full of a viscid, whitish colored mucoid fluid. A part of this fluid droppped on the floor, creating a real puddle, on the patient leaving the clinic for an adjoining room. Always constipated, but more so of late. General system suffers a great deal. Dyspepsia, intestinal meteorism. She is extremely irritable. As she has lost her only child, she desires very strongly another one. By the aid of Hodge's pessary walking easier; cauterizations with silver nitrate; vaginal injections of alum; internally iron, quinine. The discharge, which for a time diminished, soon returned with the same intensity. I saw her in the month of April, 1878, in the clinic of Dr. Paquelin. Tendency of slightly sinking down of the uterus resp. vagina. The uterus is retroflexed. The organ notably increased in size. It is rather hard, fixed posteriorly and enclosed, so to say, in the pelvis. On having the patient assume the genu-cubital position and on applying some light blows on the lumbar region, I find that the fixation above spoken of is only apparent and that the uterus can be freed. The uterus falls sufficiently forward to enable me to seize it through the abdominal walls. The cervix voluminous and wide open. After a few weeks notable local and general amelioration. The leucorrhœal discharge greatly diminished. It has assumed more of a yellow, purulent character. At the last menstrual period only slight pain. She stops treatment after two months of massage. Declares herself cured. The leucorrhœal discharge has entirely stopped. No more bearing down pain in the abdomen. Constipation improved. Much less irritability; occupies herself with her household affairs. Uterus markedly decreased in size, of softer consistency, but still remaining in its abnormal position.

On seeing the patient again in the month of December, I am able to confirm with pleasure that the condition of the patient has always been satisfactory. For the last three months the menses have not appeared. The pregnancy followed its course and the patient was happily delivered without any accident. Six weeks afterwards a sensation of hypogastric heaviness, sufficiently painful to hinder her from walking. Uterus voluminous and softer than formerly. As massage did not seem to me to be indicated at this moment, I advised the patient to take some secale cornutum and, if she did not feel better, to come back in 3 or 4 weeks. I saw her again, she felt then a little better, but she still complained of the hypogastric pressure. Moreover, she had a slight leucorrhœal discharge. Uterus increased in size (8 cm). About 20 séances of massage were sufficient to bring the uterus back to its normal state. Uterus 7 cm. Since that time I have several times received word from the patient and learned that her general state of health has continued to be satisfactory and particularly that her leucorrhœal discharge has not returned.

## OBSERVATION XXVII.

*Parenchymatous Metritis (Endometritis).—Retroversio uteri.—Leucorrhœa.—Violent Hypogastric Pains.—Coccygodynia.—Acquired Sterility.—Massage.—Cure.*

Mrs. T., portress, 38 years of age, suffers for the last 10 years of an uterine affection. which she claims dates as far back as just mentioned, and is the result of a tedious labor. She has been treated by different physicians: pessaries, cauterizations, vaginal douches. One physician has tried everything conceivable up to intra-uterine injections and curettage with no or only transitory effect. Pains in the back, radiating sometimes into the thighs; sensation of hypogastric pressure; complains of a very annoying pain in the coccygeal region; sitting posture very painful. This pain sometimes radiates into the neighboring regions, into the back, the loins and the sacro-iliac joint. Generally of a dull character and constant, it from time to time assumes a more acute character, particularly under the influence of even slight pressure. Defecation very painful. Besides, the contents of the bowels cannot be completely evacuated without the help of emollient enemata. All cathartics which the patient has resorted to to combat this trouble have not produced anything but transitory amelioration.

On account of these pains and on account of becoming easily fatigued, walking has become very difficult. In the beginning menorrhagia; at this moment normal menstruation. Discharge of a certain quantity of muco-purulent fluid. Intestinal meteorism. Uterus very large, rather hard, movable in all directions; retroversion. Owing to the long duration of the affections and to the multiplicity of the various treatments, I could not give any hope of a complete cure; so much the more as I was obliged to spend three weeks alone in combating her corpulency, which was troblesome to the massage and in rendering the integuments softer and more pliable.

In spite of these difficulties and contrary to all expectation I finally did succeed in overcoming these affections.

After 46 days of treatment, followed with perfect regularity, the patient declared herself almost cured. At my request she comes to see me again three months later. The coccygodynia is gone; the lumbar pains and the hypogastric pressure likewise; can walk without any inconvenience or fatigue. Has noticed but little leucorrhœal discharge after menstruation. Almost daily spontaneous movement of the bowels without any pain. Uterus decreased in size, softer; still in retroversion. General appearance much better.

Four months after stopping the treatment, the menses did not appear for two periods, which never happened to her before. The patient came to see me quite alarmed about this. I suspected pregnancy and apprised her of my supposition. This she refused to admit. My diagnosis was, however, sustained, and this patient was delivered of a child at full term. After that I lost sight of her. This patient was similar to the case which I reported in the preceding observation treated in Dr. Paquelin's clinic.

*Hemorrhages* are produced every time the pressure of the blood in the vessels is strong enough to provoke a rupture of their walls. They are not very rare and disappear often simultaneously with the concomitant leucorrhea.

## OBSERVATION XXVIII.

*Metritis. — Metrorrhagias. — Dysmenorrhœa. — Uterine Retroflextion. — Massage.—Cure.*

Mrs. G., 34 years of age, dressmaker, comes in July, 1877, to the clinic of Dr. Paquelin. Married, mother of a little girl 3 years old.

This person is a striking example of how the general state of health, although suffering from repeated and profuse metrorrhagias, may remain satisfactory as long as the digestive functions are normal and the repairs sufficient.

Some months after the first delivery, a second pregnancy was terminated by a miscarriage in the third month. There was an abundant loss of blood which the physician, who was called in, was able to diminish, but not to check entirely. For 6 months the patient had to keep to her bed, losing more or less blood. Ice, tamponing with alumn, perchloride or iron; impossible to entirely stop the haemorrhage. Persistent serosanguineous discharge. After some time slight amelioration. But the anæmia and the weakness were so marked that she was frequently subject to syncopes and falls in the street. Pain in the back; shooting pains in the loins; frequent micturition; nervous, excitable, irascible; papitation and dyspnœa on the slightest physical or mental exertion.

This person has gone from one hospital to another and has undergone various treatments without obtaining anything but transitory relief.

The first time I saw this patient I was struck with the excellent state of her general health. She is pale, but she is stout and does not seem to suffer much. And yet the menorrhagias resp. metrorrhagias are profuse during walking and even while at rest. She tries her best to take care of her household. Uterus somewhat soft and in retroflexion; quite movable, 8 cm. long. Deep pressure in the left cul-de-sac gives one the sensation of a swelling. This swelling corresponds to the lower part of the broad ligament. It is rather soft to the touch, diffuse and painful on pressure, and coincides with a place, where the patient has always complained of a sharp pain. The neck large. Through its external orifice, which is considerably opened, there exudes on raising the womb and particularly on compressing it between the two hands, a great quantity of blood, somewhat pale and mixed with small clots. Manual exploration of the external surface of the uterus combined with the examination of its internal surface by means of the hysterometer did not display the presence of any fibrous tumor, as was supposed. The curette, introduced without difficulty and with great precaution, did not bring out any fungous mass.

Massage difficult on account of the position of the uterus and the sensitiveness of the integument of the abdomen. In the beginning every séance followed by an abundant loss of blood. After 6 weeks already, a marked amelioration; metrorrhagias less profuse. Her strength returns. Can work better. The treatment is followed up quite irregularly. The patient, at times, absents herself from two to three weeks. The amelioration does not progress regularly either. From time to time she suffers losses of blood, but they are less abundant than formerly. At one time she considered herself to be quite cured and regarded the last loss of blood as the regular and normal discharge of the menstrual period.

For 8 months that followed the treatment all went well. She was always pale, but towards the end she felt almost entirely well. She does not suffer from any metrorrhagia since the end of the treatment. The menstruation has always come at regular intervals; only the last two are behind time. She believes herself to be in the family way. The pregnancy terminated by normal delivery, without any unusual loss of blood. Notwithstanding this, her convalescence is slow. She complains of uneasiness in the abdomen and difficulty on walking. I confirmed an incomplete involution of the uterus. Massage for 14 days sets everything aright. The retroflexion remains the same. Uterus 7,5 cm., of normal consistency. I received word from her more than two years afterwards. She has always been quite well.

But it is not of these that I shall treat, but of an affection, in which the hemorrhages are, so to say, the pathognomonic symptom, I mean a *"hemorrhagic endometritis."* We don't arrive here at any persistent cure with massage alone, but I believe it constitutes the most valuable adjuvant in the treatment of this disease. How frequent are not the relapses after curettage, even after the most thorough scraping, when nothing of the granulations has been left behind, and after proper cautherization of the interior of the uterus. These relapses result in my opinion from the fact that the lesion progressed slowly from the mucous membrane to the wall. This fact must be taken into consideration. Give the patient a rest for a little while after the operation; then apply massage and the result will be very satisfactory.

It is often on account of *dysmenorrhœa* that patients apply to specialists. Its disappearance brings relief; they suffer no longer and, therefore, they think they are cured; but dysmenorrhœa is only a symptom. Two different forms of dysme-

norrhœa are usually described, viz., the ovarian and uterine variety; the first is very frequent, the second in its idiopathic form rather rare in practice. Often it is difficult to distinguish one from the other[1].

Pain consecutive to metritis is often followed by preovarian neuralgia by irriadation; massage of the uterus often cures them, which proves that in these cases the ovaric phenomena are secondary.

If we have to deal with uterine dysmenorrhœa, we must trace it back to its origin, lay down the indications, and examine critically the several hypotheses. Nervous, congestive and mechanical conditions have been mentioned.

The question reduces itself to the following two terms. Those who adhere to the theory that it is of mechanical origin say that the patients suffer, because the cervical canal is very narrow or too oblique to allow the free and easy passage of the blood. Under Sims' influence this idea has become very popular. A woman complains of a dull, steady pain in the loins or in the hypogastrium. The pain is made worse on walking, moving and especially when the menstrual period approaches. The sensation, at first ill defined, assumes a paroxysmal character; palpation reveals neither version nor flexion; the examination by the speculum shows neither ulceration nor increase in size of the vaginal portion. The diagnosis is no longer doubtful. The cervical canal is too narrow; one tries to remove the narrowing by incision, but this does not give the expected results, the uterine colics torment the patient as much as before. This suffices to show that the mechanical theory is very little satisfactory and that its applications must be greatly restricted. We often see persons in whom the cervical orifice is so small that catheterization is impossible, even with an instrument of very small size, and who never suffered during their menstrual

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(1) We leave here quite aside those cases, in which the menstrual pain depends upon alterations in the adnexa, so much the more as these changes occur rarely alone, but nearly always complicated by changes in the uterine wall itself.

periods. The pain is relieved after the expulsion of the clots of blood; how can these get out, if the liquid blood cannot pass? Their formation corresponds to an intra-uterine stagnation. It is not easy to understand why the blood, which flows freely after removal of the clots without provoking any pain, remained imprisoned in the cavity before and accumulated there[1]. The atresia which require excision are most frequently secondary to cauterizations. It is useless to take the exception for a rule and guide the whole therapeutics by that exception. Mr. Gallard says: "From a clinical point of view, there is not a very decided difference between mechanical and congestive or inflammatory dysmenorrhœa, the transition from one to the other, as a symptomatological or chemical manifestation, takes place in a sort of imperceptible way[2]." It is difficult to understand the action according to two theories that exclude one another. How can cervical atresia produce a congestion of mucous membrane? How can this congestion produce cervical stenosis, if it is not followed by inflammatory exudation?

There is a great difference in the frequency of congestive and mechanical dysmenorrhœa; the former is common, the second one is rare. Dysmenorrhœa, sterility, lencorrhœa have the same cause: chronic inflammation.

The expulsion of the blood and the return of the mucous membrane to its normal state, are phenomena of organic restoration. It is difficult to admit that the entire integrity will be restored, that the nervous filaments, contained in the walls of the uterus, will in no way be affected, when alternative regions of congestion, denudation and restoration exist.

To sum up: the mechanism of uterine dysmenorrhœa is

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(1) Everybody remembers the researches conducted at the time by Scanzoni, in order to combat the mechanical theory of Sims, in which he proved that the uterine cavity is quite empty and free from blood just at a time when the patient suffered most from her menstrual pain and that this state corresponds to the premenstrual period.

(2) Gallard. Lecons sur la menstruation, Paris, 1885, p. 278.

explained by the menstrual congestion, the almost subacute attacks in an organ affected by chronic inflammation, the irritation and compression of the nervous filaments.

## OBSERVATION XXIX.

*Parenchymatous Metritis (Endometritis).—Dysmenorrhea.—Remote Reflex Troubles.—Massage.—Cure.*

Mrs. M., 36 years of age, comes to my office in the month of April, 1880. Mother of two children; the younger 5 years old. Menstruation at the age of thirteen without any complication ; always regular. The last confinement very painful and tedious. Since that time treated by different specialists of uterine catarrh with extensive ulceration Cauterization with silver nitrate; intra-uterine injections with a solution of perchloride of iron. Hydrotherapy, salt water baths; amelioration, but only of a temporary nature. From time to time, especially at the time of the menses, she complains of pains in the region of the loins. radiating into the thighs. Moreover, she complains of dull pains over both ovaries. These pains sometimes assume an acute, paroxysmal character. The leucorrhœa, formerly profuse, is at present insignificant; only a slight muco-purulent discharge. Duration of the menstruation 4—5 days. No menorrhagia. The dysmenorrhœa has only increased. For more than two years the patient is obliged to stay in bed 48 hours before the onset of the menses. The pains cease as soon as the sanguineous flow is established; they reappear, but very slight, the following day and last to the end. Digestion poor, appetite capricious; constipation. Great swelling of the abdomen. Uterus voluminous; moveable in all directions; marked anteflexion. Tenacious and thick mucoid fluid escapes the cervical orifice, although only in small quantities. Intestinal meteorism renders massage very difficult. Uterus a little sensitive on pressure. The manipulations provoke a hypogastric pain, which the patient compares to compression as produced by an iron bar. This pressure is accompanied by a sensation as though traction was being exerted in the region of the heart. These remote pains are more painful than the local ones produced by massage of the uterus proper. They cease entirely after a fortnight. The treatment was begun immediately after a menstrual period, and what is very strange, is that the next menstruation came on quite suddenly and so to say by surprise, as it was not preceded by any prodromata. It set in while she was out assisting the opening of the "Salon" in Paris. She was, likewise, able to go out in the evening and dine in town without any inconvenience. During the entire duration of the menstrual period no more pain. After this she was always free from her catamenial pains. No longer any complaints in the region of the ovaries or the loins. The patient is able to take long walks, remain standing for a long time. No leucorrhœal discharge. No constipation. The meteorism, too, is almost gone.

The treatment has lasted from 6 to 7 weeks; there have been 44

séances. The patient has gained flesh and strength and looks quite healthy. I saw her several times during the following years. She was always enjoying good health.

## OBSERVATION XXX.

*Parenchymatous Metritis (Endometritis).—Anteflexio uteri.—Dysmenorrhœa.—Profuse Diarrhœa at the Menstrual Epochs.—Massage. - Cure.*

Mrs. S., 28 years of age, native of Sweden, consults me in Paris in the month of December, 1878, on account of violent pains at the menstrual periods. In 1874 a miscarriage in the early months of pregnancy. This accident did not produce any immediate consequences. It was 4 to 5 months after this that she began to complain of pain at the approach of her menstruation. In the interval she was tormented by a dull, bearing down pain in the back with a dragging sensation in the loins. These pains gradually increased in intensity and were accompanied by a sensation of heaviness in the abdomen. The menses also got so painful that the patient was obliged to retain one position for 2 or 3 days. As soon as the menstrual flow comes on, the pain ceases. Her general state of health has suffered very little. The patient always presents the appearance as being in perfect health.

The digestive tract was not deranged till the spring of 1877. After this the menses were nearly always accompanied by a diarrhœa, which did not leave the patient until after the cessation of the menstruation. No tenesmus, no colics. She has sometimes 12 liquid stools in 24 hours. The diarrhœa is persisting during the night too. At times two or three menstrual periods pass without the occurrence of these accidents. The patient is exhausted after each one of these attacks, but she picks up very quickly again, and to such an extent that after a few days no one would surmise that anything has been the matter with her. This patient has been treated with cauterizations of the neck of the uterus; sitzbaths, iron and saline baths (Kreuznach); enemata of opium; suppositories of belladonna. The intestinal trouble has been treated by another physician, but he has never succeeded in stopping the diarrhœa for more than 24 hours.

When I saw this patient for the first time, she had not followed any treatment for over 18 months. She has a leucorrhœa quite insignificant, but the dysmenorrhœa and the diarrhœa are as severe as ever.

Uterus, in anteflexion, exerts a great deal of pressure on the bladder. The former frequent micturition does no longer exist. The consistency of the organ is normal and the organ is quite movable. Nothing to be detected in the cul-de-sacs. The sound enters more than 7 cm.

In the beginning, massage is painful, especially on a level with the fundus uteri. But the pain ceases almost completely after a fortnight. As in the case preceding this, the treatment was begun immediately after a menstrual period. At the next period the patient was quite surprised by the amount of menstrual flow. She was standing close by the sofa loosening her gowns in order to undergo the treatment,

when all at once she said, "I cannot understand why the blood does not come on. By this time I ought to be in bed for at least a day or two and be suffering from pains." Scarcely had she uttered these words, when she said, "Now it's coming on." The mere thought of the painful séance which she was about to submit herself to had probably produced a moral effect, sufficient to cause a rupture of the capillaries of the mucous membrane. The pain did not return during the five days which her menses lasted. It did not come back either during the entire duration of the treatment 7 weeks (42 séances). Diarrhœa accompanied this first period, but the fæcal matter was less liquid. The patient feels better. No longer any sensation of heaviness in the abdomen or pains in the loins. Moral state much better. Uterus 6,5 cm., always in anteflexion.

I saw the patient again after the third menstruation that followed the beginning of the treatment. There was no real dysmenorrhœa properly so called, but the patient did not feel so well as during the preceding epoch. She complained of a sensation of uneasiness in the abdomen. Ten more séances were sufficient to cause its disappearance. In the month of June, 1878 (22 months after the cessation of the treatment), I received a letter from my former patient, who had returned to Sweden. She states that since she left Paris she has not had any menstrual trouble nor any diarrhœa. Her general state of health is excellent.

*Prolapse of the Uterus.*—Amongst all the diseases of women, generally treated by massage, the treatment of uterine prolapse is the one in which I have the least experience.

Brandt, von Preuschen, Profanter have used massage at the same time as elevation of the uterus, gymnastic exercises of the muscles of the thigh and light tapotement on the lumbo-sacral region.

In order to execute this first manœuvre (lifting) the patient lies down on her back with her legs flexed on the pelvis. The masseur, sitting at her left side and facing her, thrusts his right supinated hand between the pubic symphysis and the bottom of the uterus, while an assistant maintains the uterus in anteversion with one finger introduced into the vagina.

The masseur then seizes the uterus with his fingers in flexion. The hand remaining in this position is directed towards the epigastrium, so that the uterus is drawn upwards. When the limits of the displacement are attained, the womb is abandoned and slowly allowed to return to its former position. The assistant's finger follows this movement and on account of the

pressure which the finger exerts backwards on the vaginal region, it prevents the uterus from getting retroverted. These liftings must be performed three times during the sitting.

The movements of the thigh consist in methodical exercise of the adductors. The patient is in the indicated position, her knees and legs close together. The masseur sitting next to her separates the knees, while she offers resistance to this movement. The manœuvres are reversed when the knees are separated; the patient tries to bring them together and the masseur resists them.

Mr. Von Preuschen considers the first time as accessory; Brandt's method only worked under the muscular gymnastics.

Forced adduction, especially when the patient raises her backs at the same time, produces a powerful and prolonged contraction of the levator ani muscle. Thanks to this, the size of the vagina is diminished; the uterus is driven upwards and later on, when the treatment has been pursued for a long time, it is maintained in this position[1].

Mr. Sielski replies to this that a muscular contraction produced in this way cannot last long enough to constitute a means of fixation. In admitting that adduction brings about a powerful contraction of the levator ani muscle, this muscle gets tired and displacement occurs again[2]. The author does not take into account the muscular tone. Yet at every moment mechanical procedures are employed in order to increase it. Whatever the explanation may be, that is advanced in favor of it, it is certain that the method has its advocates. Brandt applied it during his stay at Professor B. S. Schultze's clinic at Tena; he was successful in one case; Preuschen likewise in another one at Greifswald. This result was all the more remarkable inas-

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(1) Die Heilung des Vorfalls der Gebärmutter durch Gymnastik der Beckenmuskulatur und methodische Uterushebung. (Centralbl. f. Gynäkologie, No. 13, 1888, p. 201.).

(2) Das Wesentliche in der Thure Brandtschen Behandlungsmethode des Uterus Prolapsus, Modifikation der Methode, Centralbl. f. Gynäkologie. Jan 26, 1879, No. 4, p 49.

much as he had to treat an inveterate case. Profanter also recommends it[1].

It is necessary to ask a preliminary question. I have treated only two cases of prolapsus uteri and in them I performed uterine and peri-uterine massage, then abductive movements. I do not believe, however, that we can by any means expect results comparable to those obtained in inflammations of the uterus or its vicinity. The patients are able to walk, to get upstairs, but if they are obliged to do hard work, perform sudden movements or make violent muscular efforts, the cure is but a temporary one.

After the treatment of uterine prolapse by massage, relapses were not rare, even in patients treated by Brandt or his pupils. In women obliged to do daily hard work this is very often the case. There exist, however, authentic observations where definite cure was obtained. This is what happened in one of my cases; in the other I only had a temporary result. These differences are explained by the different social surroundings of the patients. The first patient could abstain from movements and keep quiet; the second one, who was obliged to earn her living, seemed cured at the end of the treatment. In less than a week she resumed her former occupation (she was working in the fields), and at once the trouble was reproduced[1].

Treatment of uterine prolapse must at all events always be regarded as the weak point in the gynæcological massage.

*Uterine Fibroma.*—In the beginning of my practice in Paris I saw a woman thirty-five years old and mother of three children, who had a miscarriage five years previous. Since then she

(1) Die Massage in der Gynäkologie, Wien, 1887.

(2) A very interesting article on the treatment of prolapsus uteri by Brandt's method was published some years ago by Dr. Prochovnik in his work on uterine massage. (Massage in den Frauenkrankheiten, Hamburg, 1890.).

had not become impregnated, and had always complained of uterine trouble; leucorrhœa profuse, metrorrhagia, pain in the loins, hypogastric heaviness, frequent urination, obstinate constipation and attacks of gastralgia. All these symptoms she had experienced. After having been treated in vain for ulcerations of the cervix, she came to the hospital Saint Louis in June, 1876. At this instance I observed the usual phenomena of chronic parenchymatous metritis, viz., an increase in the size of the uterus, hypertrophy of the cervix, ulceration of its posterior lip and slight induration of its walls; but, besides this, there was a subserous fibroma at the left side of the uterus, and another irregular one on its posterior wall, from where it bulged into the fossa Douglasi. I began to massage the whole womb, because I knew already that, even if massage were unable to diminish the size of the fibroids, it would often influence the effects brought on by them. A little more than two months after the beginning of the treatment, the ulcer was nearly cicatrized; the metrorrhagia had almost ceased; there was neither gastralgia nor constipation; walking was easy, even the uterus had decreased in size and the tumors were more prominent on palpation. These results were not to be scorned at.

Since then I have often applied the procedure in similar cases, and I have nearly always obtained marked amelioration. It is indeed a great palliative measure that never presents any inconvenience. There are in the development of fibroids peculiarities secondary to irritation of the uterine walls which it produces. Metrorrhagia, leucorrhœa and similar symptoms are phenomena of the concomitant metritis; they are overcome in many small and middle-sized fibromata, but only in these.

It seems to me that in inter-parietal fibromata the method has another effect; namely, that it contributes to render them more superficial. This is an advantage. When these tumors are subserous, they grow more rapidly, but they are more easily tolerated; when they are intra-uterine, they are more easy to get at.

## OBSERVATION XXXI.

*Multiple Uterine Fibromata.—Dysmenorrhœa and Metrorrhagia.—Extreme Weakness.—Massage.—Cessation of the Metrorrhagia and the Dysmenorrhea.—General State of Health Improving Wonderfully.*

Miss L., 18 years of age, comes to consult me in the month of March, 1878. Menstruation for the first time at 14 years of age. Duration of the periods 5 to 6 days; nothing abnormal about them. She then went 6 months without any sign. After this time the periods returned suddenly. In the subsequent menstrual periods their duration became longer and they were at the same time accompanied by acute pains in the back and in the loins, sometimes on the left, sometimes on the right side. Violent at the approach of the menses, they gradually diminished as the menstruation progressed. Since 1873 the duration of the menses has increased in between the periods so that finally the flow has been almost constant. Since last spring the menses are incessant so that it is almost impossible to make out the precise moment of the menstrual period. Frequent desire to urinate. Obstinate constipation. Oedema of the feet and the malleolar region.

Adstringent vaginal injections and disinfectants, when the discharge assumes a bad odor. Iron, quinquina, ergotine all these without any amelioration. For the last 4 months the patient has been obliged to stay in bed for the greater part of the time. The blood has daily grown paler, without any tendency to coagulate. She has gotten thin and weakened to such an extent that she cannot walk; she is particularly unable to get up stairs without assistance. Constant cephalalgia; palpitation; the least effort provokes giddiness; anorexia, aversion for all food. Sleep irregular, often insomnia; discouraged; ideas of suicide; extreme emaciation; dirty grayish color of the face.

Uterus slightly displaced backwards. Gives to the touch the sensation of an irregular mass, because it is the seat of several fibromata, most of them having the size of a walnut. They are more or less prominent on the external uterine surface. The hysterometer is introduced with quite some difficulty (8.5 cm.).

Two weeks after the beginning of massage the young girl declares that she is already losing less blood. After 6 weeks notable amelioration. The metrorrhagias are less abundant; the other symptoms have also diminished. She is able to walk and come alone to the office. The appetite has come back, it is rather ferocious. No more dysuria or trouble on micturation. Sleep quiet. Under the influence of the same treatment prolonged for several weeks the metrorrhagias ceased completely. The fibroid tumors have not decreased in size. They seem to be even more prominent than before.

I saw this girl 4 months afterwards at her home. On my arrival I saw her jumping a rope with other girls of the house. She has grown stout. Can walk and make extensive tours on foot. Menstruation is re-established, but the duration is always long, lasting 9 days. Micturition and bowels normal. Her parents asked me, how I was disposed towards her idea of entering matrimony? I gave an unfavorable advice, mentioning as a motive the possibility of a return of the

affections. My advice, however, was disregarded and she got married towards the end of the same year. I saw her several times since. Her general state of health has remained excellent. Fortunately she has not become pregnant. Menstruation is regular, of the monthly type, and lasts 9 days, painless and without losing an unusual amount of blood. Looks always pale, but does not complain of anything.

*Operative Procedure.*

We begin as gently as possible, and then gradually increase the force of pressure in keeping account of the peculiarities, the cases and the patient's tolerance. We must favor as much as possible by means of massage the absorption of the adipose tissue of the abdominal wall, so that this one will present the smallest possible thickness and suppleness. The hand placed into the vagina, lifts up the uterus so as to get it as near as possible to the other hand, which works through the abdominal wall. In this way it is not necessary to exert much pressure on the abdominal wall and we spare in consequence thereof a great deal of pain to the patient.

At the arrival of the menses and immediately afterwards the local sensitiveness is nearly always increased. We must now proceed with more deliberation, prudence and gentleness than at any other time.

Is it necessary to suspend treatment after three or four weeks because of the menses? We find nearly always that, when massage is applied, the condition is better than at the moment when it was suspended. The vis naturæ medicatrix is increased and guides the local action produced by massage into a favorable direction. It is better to treat the patients at home than in a polyclinic. They can then rest after massage has been performed. The conditions are better than if they are obliged to walk for a long distance immediately after massage.

*The mode of procedure differs very little from bimanual abdominal and vaginal palpation.* The first visit is devoted to methodical exploration (interrogation, palpation, examination with the speculum). If the case is one of those in which massage may be performed, you begin the day after. The patient must be told to empty her bladder before every sitting.

She assumes the dorsal position, with her head raised, the legs flexed on the thighs and the thighs on the pelvis. She ought to breathe freely and without effort. We divert her attention in order to favor relaxation of the muscles of the abdominal wall. When her legs are abducted, the masseur, who is at her left side, introduces his left forefinger and middle finger into the anterior vaginal cul-de-sac so as to support the anterior wall of the uterus, while through the abdominal wall he seizes with the other hand the body on which he performs at first light frictions and gradually more energetic ones. In case of displacement he must rectify the position of the organ as much as possible. The fingers deeply introduced into the vagina have to maintain the uterus firmly or else it will slip, which is very painful.

It is sometimes well, in massaging the uterus, to press it against the posterior surface of the pubis. This is the way to perform energetic and efficacious massage; the empty bladder does not prevent it.

In some persons, with very decided retroflexion or retroversion of the uterus, the latter is deep in the pelvian cavity. Before I resort to more energetic manipulations of rectification, I place the patient in the knee-elbow position and perform light tapotement on the lumbo-sacral region. This manœuvre is often sufficient to produce the desired effect.

If it is fixed by old and strong adhesions, all attempts at liberating it must be abandoned. In breaking the attachments, hemorrhages and serious pelvic peritonitis may be produced. In these cases, we must favor the absorption or at least the diffusion of the organized exudate by means of preliminary manœuvres, to which I shall return later on in order that the uterus may, if possible, be at least sufficiently movable for our purpose. The following precautions will render massage more tolerable: 1) Exert gradual pressure on the uterine body after you have seized it. 2) In order to seize it properly in difficult cases, place the hand on the abdominal wall, push it downwards during expiration, retain the hand in place during in-

spiration and at the next expiration introduce your hand a little further. 3) Avoid by rough manœuvring an exacerbation of the painful impression experienced by the patient when the uterus is seized through the abdominal wall and wait a little before pressing. 4) Devote all your attention to retain the uterus. This is easy when it is voluminous and soft; but more difficult when, thanks to the treatment, it has gotten smaller, spheroidal and hard.

Pressure sometimes produces radiating and reflex pains in the ovaries, the loins, the ano-perineal region, the epigastrium and even in the præcordial region[1].

I have always used massage alone; and only at the end of the treatment, when the local state was satisfactory, have I, from time to time, advised a hygienic treatment. Strengthening alimentation, a stay in the country, hydrotherapy and sea-baths are useful complements.

The procedure is easily tolerated, because the pain ceases almost immediately after the sitting. Up to the present time we have had to deal with favorable cases. The method was unknown; the patients had heard of it from one of their friends who praised it because she had been cured. They had great confidence, and they were only too willing to make a slight effort on themselves in order to overcome the sensitiveness of the abdominal integuments. These persons were docile and intelligent auxiliaries to the practitioner. I cannot expect that this will continue in the future, when physicians will prescribe uterine massage as soon as it seems indicated in the same way as they prescribe injections. Let us hope, however, that the results will be still more satisfactory, because the treatment will be begun early in the disease.

I have already alluded to the advice which I cannot too often repeat: great gentleness is necessary at the beginning of the treatment. In this way we get along much better than if

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(1) Nothing can be done for these radiating pains, which may be more painful than those produced by the pressure on the uterus resp. the abdominal walls.

we apply a great deal of force. A description of a certain method will never supply the real value of that method which is only to be required by dexterity and practice. We may say to persons who want to learn how to employ uterine massage: Select your first cases well, that is the principal thing. Take in preference thin and not very nervous women in whom the uterus is increased in size and of a more or less soft consistency. After you have cured two or three, you will have confidence in yourself. After your statistics include thirty of forty cases, you will perform massage in conditions in which you would never before have thought it possible. I generally give but one séance a day, lasting about five or eight minutes; two would be preferable, if the patients demand it and are able to bear it. The average duration of the treatment varies from forty to fifty days. It is all the shorter, if we commence early in the beginning of the affection.

When patients come to see me a little before their menstrual period, I wait until it is passed, and I begin immediately after it. The reason is this: Let us suppose that the catamenal interval is twenty-five days, I can then give twenty-five consecutive sittings. In ordinary cases I have every chance of interrupting the treatment but once. It is well to warn the patient that during the treatment the menses occur almost a little ahead of time and their duration is longer.

The principal difficulties we meet with depend: 1) On the extreme general sensitiveness and especially that of the abdominal wall. 2) On corpulency or meteorism. 3) On displacement. 4) On the presence of viciously situated herniæ. 5) On the narrowness and rigidity of the vagina.

Those of the first three categories are relative ones. Through skill and perseverance tolerance is established and the procedure may be employed to its full extent. It is sufficient to massage the abdominal wall alone for some time, so as to get it accustomed to the contact of the hand.

In case of tightness of the vagina, I introduce only one finger instead of two; acute or subacute attacks of metro-peri-

tonitis are exceptions and only happen with novice practitioners. They may, however, result from the indocility or imprudence of the patients. I always tell them to stay in bed during the menses which come on during the treatment and during the first one following the treatment. Some persons disregard this order and with impunity; in others it is followed by local inflammatory affections.

When we have to treat a nervous and weak woman, rest in bed or on a sofa for some time after the sitting ought to be advised. I have sometimes seen affections of catarrhal metritis reappear after a longer or shorter time, when the cure seemed complete. These relapses are much less serious and obstinate than the disease itself.

I only know of three absolute contra-indications of uterine massage: virginity, acute or subacute inflammation of the uterus or its appendages and pregnancy. The latter we have observed to occur during the treatment and, thanks to the latter, it has followed its course, but we must not rely on this. As soon as a period is delayed or menstruation stops entirely, treatment has to be suspended.

The fear has often been entertained that pressure on the uterus would give rise to complications. I have never seen any arise. Most of those which have been pointed out after curettage were of septic origin. They are to be feared more after a bloody operation, than after a procedure in which neither muscular fibres nor vessels are torn. I take great care always to use strict antiseptic precautions. The accidents I have observed to occur have been insignificant and I might abstain from mentioning them, namely ecchymosis of the abdominal wall, small indurations of the subcutaneous cellular tissue which were painful to the touch (they ought to be avoided in massaging), slight vaginitis, which did not even prevent the continuation of the treatment and which I quickly overcame by alum tampons. Twice I have seen inflammations of the vulvo-vaginal gland with a slight febrile movement and a little local tumefaction. There was no suppuration, and after sus-

pending the treatment for three days I was able to resume it.

§ 2.—*Massage in Affections of the Neighborhood of the Uterus.*

Most of the observations which were published by me under the title just preceding, were recorded at Dr. Péan's clinic, in the hospital Saint-Louis, in Paris. He intrusted to my care patients who had come to the hospital because of parametritis, perimetritis or ovaritis, and in whom he did not wish to interfere surgically before it had been proven that all means resorted to by modern gynæcologists were powerless. In most patients injections, pessaries, general constitutional treatment, cauterizations, curettage, etc., had been tried. No single procedure affected persistent cure. The state of the patient was carefully examined into at the beginning of the treatment. Massage was used alone and after the treatment her condition was again examined. Consequently, if there was any cure or amelioration, it could only be attributed to the last form of treatment.

I had the patients come back at epochs varying from six months to two years; unfortunately I have not been able to obtain in all cases what I desired in this respect. Some of the patients, who lived in the country, were poor, and it would have been unreasonable to ask them to make a long and expensive trip for the sake of a simple examination. Others who lived in Paris promised to return at a certain date, but we never saw them.

In spite of all this, future examinations were made in several cases. I especially insisted upon these examinations when I had to deal with uterine deviations, versions or flexions.

My results have been rather satisfactory, as is shown by the observations I published in my treatise. Therefore, in affections of the neighborhood of the uterus and its appendages I use massage alone, and I only interrupt the treatment during the menstrual periods.

The precautions we are to take at the beginning are the same as those in regard to massage of the uterus. The patient

has to breathe freely, and we have to attract her attention as much as possible in order to cause more readily a relaxation of the muscles of the abdominal wall[1].

Let us now suppose that we massage in the most usual manner, that is by the combined method, abdominal and vaginal. We proceed as follows: Two fingers are introduced into one of the vaginal cul-de-sacs, support the exudate and, if possible, push it towards the other hand which works through the abdominal wall. Thanks to this manœuvre we may sometimes get at the exudate without any difficulty and without the patient suffering too much.

We may massage in situ the fixed portions through the abdominal wall; the nearer the affections are to the posterior wall of the pelvis, the greater is the distance the fingers have to pass over and the more powerfully we have to press, the more deadened becomes the tactile sensibility. It is in these conditions that the rectal route is particularly indicated.

Generally when the vaginal examination is made with the forefinger and the middle finger, the ring and little finger are closed into the palm of the hand. The pressure of the articular osseous extremities of the first and second phalanges on the perineum is painful to the patient. I prefer on this account to hold the fingers straight, like Brandt, and in pressing down and back on the perineum. We are thus enabled to reach higher up and we do not hurt so much.

In a few rare cases it is better to have the woman stand up during the exploration as well as during the massage. We can easily find out with the patient in this position, whether the pelvic organs have or have not a tendency to sink and to get nearer the fingers placed in the vagina. The high seated exudates in the pelvis are more easily reached, than if the patient is in the dorsal position. The intra-vaginal fingers play an almost passive part in the act of massage properly so-called.

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(1) Some persons learn this very quickly, others find it more difficult and some will never learn it.

They support the organs or the inflammatory products on which the other hand is working through the abdominal wall; that is to say, these intravaginal fingers must remain quite fixed and may only be displaced a little, when we desire to support a different part of the exudate. Brandt advises preliminary circular frictions of the abdomen. The integument will then get accustomed to the contact of the hand. Its sensibility and that of the subjacent muscles is diminished. The wall can be more readily pressed down and the intestinal mass be better repelled. The object of preliminary centripetal frictions, in which the palm of the hand is turned towards the sacrum, is to produce depletion of the lymphatic vessels of the region and render them more fit for absorption. These frictions are of an at least doubtful utility.

In most cases it is well to have the patients assume the same position as in massage of the digestive organs. They will be placed in the dorsal position, the legs flexed on the thighs and these on the pelvis[1]. Marked curvature of the vertebral column, especially of the lumbar region, must be avoided, because, as I have already mentioned in the treatment of constipation, it will produce a sort of bulging forward of the abdominal viscera, and an increase of tension in the abdominal wall.

In order to get a good and proper hold of the mass of the exudate, the abdominal wall is slowly and gently pressed down. All shocks, which might be able to awaken or increase the sensibility, are to be avoided; in difficult cases we have here, as well as we did in the treatment of uterine affections, to profit by the period of expiration, to introduce then our hand as far as possible in pressing down into the abdominal wall; at the next expiration we push it still deeper.

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(1) It seems useless to allude to the necessity of taking all possible precautions to save the modesty of the patient. It is mainly on this account that the treatment has always to be performed underneath the garments, which are only to be loosened at the waist.

Vulliet was right in advising to touch the abdominal wall with the last phalanges of the fingers and not with their extremities. The sensation produced in this way is less disagreeable. When we have arrived at the exudate, we must give the patient time to recover from the disagreeable sensation which she experiences. Then the physician grasps the tissues, which he desires to subject to manipulation.

If the walls are too thick, too rigid or too sensitive so that the exudate cannot be reached without experiencing great difficulties, then it is a case for separate and preliminary massage of the abdominal wall, as I have already advised it in uterine massage. This procedure renders the integument more supple, less sensitive and the abdominal muscle less irritable. The meteorism which is of great inconvenience in the manipulations is likewise diminished.

Massage must always be performed in the direction of the ascending venous and lymphatic currents, that is to say, from the neighborhood of the uterus towards the pelvic wall, the sacral and sacro-iliac regions.

Before the first séance the patients complained of only one kind of pain; now another is added to the former. They experience pain in certain parts of the abdominal wall which they cannot quite locate. This is the result of traumatism necessarily produced by the procedure; it is of no importance and lasts but a few days.

We must proceed gently and cautiously, otherwise we shall cause derangements which nearly always prevent us from obtaining the expected results. Slight pressure and short sittings are the invariable rules at the beginning.

Great attention must always be paid that nothing sudden or unexpected happens during the séance. We must take care to retain with a firm hold what we have seized, because the slipping of the tissue through the fingers produces a sudden traction on the nerves in the neighborhood and a very painful sensation. After we have acquired more confidence and dexterity; after we have gradually gotten the patients accustomed

to the manipulations, we may work longer and more energetically; the séances may then last up to ten minutes.

It is well to allow short intermissions several times during the sitting. No one can imagine how beneficial these interruptions are to the patient; the physician himself finds an advantage in them; it is a means of sparing his strength. By rest I mean a momentary stopping of the manipulations. It is not necessary to loosen one's grip.

Another very useful precaution to counteract fatigue is to massage with the hand of the side opposite to the exudate; if this is at the left, the right hand has to work on the abdominal wall and the forefinger and middle finger of the left hand are introduced into the vagina and support the exudate. I employ the two manipulations recommended by Brandt: pétrissage and distension.

1) *Pétrissage* is the most useful manipulation and the one which is most often employed. The diseased part is slowly and gently rubbed or rather kneaded, as indicated by the word, with the fingers of the right hand on the abdominal wall; the two fingers in the vaginal cul-de-sac serve as a guide and support. Pétrissage is especially useful when a chronic infiltration of any part of the pelvic cellular tissue, or when old inflammatory remains in the broad ligaments exist. The force to be employed must be graduated according to the sensibility and the consistency. We always begin at the periphery and proceed towards the centre.

2) *Tension* is a manipulation which is not much used except in gynæcology. It always includes tension and pressure, to which friction is often advantageously added. The object is to seize between the fingers placed in the vagina and on the abdominal wall those parts of the tissue which are to be treated and distended. This is difficult, if they are of small size. The intra-vaginal or intra-rectal fingers exert a slow, gentle progressing tension on the exudate directed towards the right hand.

After a few moments these fingers are slowly withdrawn,

while the right hand follows the movement downwards, always with a great deal of care not to let anything slip. I always try to act in opposite directions with both hands at the same time. At every sitting the procedure is repeated 8 or 10 times; later on it may be repeated without any inconvenience 10 to 20 times.

Tension is indicated every time we have to deal with adhesions of all kinds or consistency; it is also advantageously made use of, when more or less retracted inflammatory products exist in the thickness of the broad ligaments. Applied in the first cases it is of all manipulations the one which requires most care and prudence, the most tactile acuteness and exact appreciation of the strength that has to be displayed. All unskillfulness might produce serious accidents. Our purpose is to render the organized tissues more supple and elastic, without causing them to disappear. Sometimes we are even obliged, in order to succeed, especially in old cases, to employ a certain amount of strength. I have never observed any bad results from this. In some cases it is well to add pétrissage.

Displacements of the pelvic organs are natural and frequent consequences of the presence of exudates. The uterus is very often used as a lever for exerting the tension; it is not possible with other organs.

We have proceeded under the most favorable hypothesis; we have supposed that the sensitiveness of the patients was such as to render a complete examination possible and permit us to reach the exudate through the abdominal route.

The examinations are sometimes so painful that it is impossible to form an exact idea of the state of the uterus and its vicinity, and yet there is perhaps no procedure that requires such definite and exact diagnosis as the massage in question. In some cases one is obliged to resort to chloroform narcosis; this is, however, an extreme measure only to be thought of if nothing else can be done.

After having overcome all these obstacles, can we say that we have now the means of making as near as possible methodi-

cal examinations? This is not the case. The determination of the objective symptoms, however interesting and indispensable they be, is not always sufficient. The local modifications of the sensibility present an interest of the highest order; very often these modifications alone give us information of the age of the exudate and the disappearance of the acute phenomena.

For lack of information on this subject we may very easily not be able to recognize the small deposits of chronic peritonitis, which it is, however, indispensable to consider during the treatment.

The best means of alleviating the sensitiveness at the beginning and to render exploration more easy, is to massage the abdominal wall for some time.

All authors do not adopt this operative procedure which I have described, to its full extent. We are obliged to modify it in certain conditions. Brandt introduces only one finger into the vagina. I do not see the advantage of doing this. We cannot possibly get so high up as with two, unless we have an exceptionally long fore finger. As Ziegenspech has properly remarked, the sensations perceived with one finger are less precise than those which we obtain with two; we might well enough suspect the inequalities of a surface; but it is impossible to get an exact motion of the extent and thickness of what has to be massaged: with two fingers, on the contrary, we obtain stereometric information[1].

Formerly I maintained, in studying the affections of the uterus proper, that I saw no advantage in massaging by the rectal route. This time I do not wish to make such an assertion; I am rather inclined to the opposite belief.

In many cases this is preferable to the vaginal route, in some it is the only that can be chosen. In virgins it is impossible to perform pelvic massage, except by the rectal route. Moreover, through experience very precise notions on the conditions of the accessible organs are acquired. The rectal route

(1) Volkmann's Klin. Vorträge, No. 253—57.

is also the one to be preferred when we are acting on an exudate in Douglas' pouch, or on those placed very high up on the side of the iliac fossa or on the ovaries which are adhering either to the posterior pelvic wall or which have fallen downwards into the lower pelvic floor and have become fixed in this position by adhesions. The rectal route does not present any more difficulties than the vaginal one; the extremity of the fore finger is introduced and directed towards the anterior rectal wall. Exploration and massage are performed in the same way as by the vaginal route; that is to say, the rectal finger is used as a support, and also to bring the exudate up to the fingers that are working through the abdominal wall or vice versa. It thus plays an active and passive part in the frictions and the tension.

*Malning.*—A manœuvre, which Brandt considers as of great importance and which can only be applied through the rectum, he calls malning. The patient is placed in the dorsal position, the legs are flexed on the thighs, and the thighs on the pelvis; in some cases patients have to stand up. The physician introduces the fore finger into the rectum and with the last phalanx performs gentle and graduated frictions on the surface of the exudate. Malning is then in reality only mediate effleurage, inasmuch as between the working finger and the tissue, whose absorption we wish to provoke, there is only the rectal wall. When the sensibility is diminished, which generally happens after a few séances, one may press harder: the malning then becomes similar to friction.

The patients sometimes complain of rather violent pain in the back and in the thighs. This proves that we are relatively near the sacral plexus or that some of its filaments have been touched. When our attention has been drawn to this, it is easy to spare the patient these pains by avoiding the region whose irritation produces these pains. This kind of massage is particularly advantageous, when the exudates have their seat in Douglas' pouch; thanks to this method the absorption

of the exudates nearly always takes place and the uterus, which was more or less fixed, regains its mobility.

The menstrual period exerts a favorable influence on the absorption of the exudate the same as we saw it do in chronic metritis. We are often fortunate enough to find in resuming our treatment after the interruption, that there is a spontaneous amelioration of the local condition. Brandt and Niessen of Christiana thought that advantage might be taken of this physiological process and that the manipulations ought to be continued during the menstrual periods. They claimed that the manipulations would not be any more dangerous at this moment than at any other. By making the séances a little shorter and by proceeding very gently, one might follow up the treatment without any interruption and thus profit not only by the proper advantages, which it possesses, but also by those of the menstrual periods[1].

I am less convinced of the advantages derived from this method of procedure than Brandt. Menstruation is a period of an active, even exaggerated state of repair. The phenomena which it produces cannot much be relied upon. Holzapfel at this moment, among other dangers fears retro-uterine hematocele. I do not believe that this fear has any foundation, because I have never heard such a calamity take place. It suffices for us to know that it may happen and to be on the lookout.

Another objection is raised by the patients themselves. In order to get them to submit to manipulations, which are more painful during the menses than during any other time, we must be pretty sure that a continuation of the treatment during this period will render it more efficacious and shorten its duration. I, for my part, am not convinced of this fact. Following Brandt's assertions, I have tried massage without any interruption in very favorable cases, that is, when the rectal route was the only possible one to take. I did not notice that

(1) Brandt has carried out these ideas in a great number of cases wkithout ever having to repent for them.

the absorption was any more rapid than in other conditions. I am not an advocate of the combination of massage and Swedish gymnastics. Brandt does not favor the employment of one without the other; according to him, they are two inseparable elements of the same method. His pupils have gone still further. Without Swedish gymnastics, they claim, no healing is possible. It is well nigh impossible to tell which is the essential manipulation and which is the adjuvant.

Pelvic massage is a therapeutic procedure which is directly applied in affections of the neighborhood of the uterus and its appendages. Gymnastics have different indications. I regard the subject from this standpoint because of the best arguments adduced in favor of massage is that it is a topical medication which can be applied on the seat of the lesion itself. We are confronted with a morbid process without any tendency to retrogression, with an inflammatory exudate which causes local and distant disturbances. This exudate must be made to disappear. I fear that an indirect manœuvre, however justifiable it may be supposed to be, does not act precise enough to be efficacious. It is difficult for one to understand how co-ordinate movements of the legs, thighs and vertebral column can exercise any influence upon a small zone of inflammatory infiltration in Douglas' pouch and the broad ligaments, or on a peritonitis. We are told that we have to yield to facts; unfortunately for this experimental proof, another one, just as experimental, may be opposed to it. The affections which Brandt and his pupils cured by massage and Swedish gymnastics, we cure just as quickly and just as well by massage without gymnastics. The most evident result of the two methods employed simultaneously is that they extend sittings over a longer period of time, and thus uselessly tire out the patients.

I do not want, however, to be absolutely opposed to gymnastics. They may be useful after the treatment by massage is finished. In several patients the general constitutional symptoms become at a certain moment nearly as troublesome as the

local affections themselves. On account of long, continuous suffering, on account of haemorrhage and profuse leucorrhoea, the patients get anaemia and arrive at a state of cachetic languor and nervousness so that work demanding any length of time becomes impossible. After the pelvic exudate has disappeared and the subjective improvement, although obvious, does not come up to our expectation, then is the time to use adjuvant methods. Swedish gymnastics are among the best of their kind.

Let us now see how things progress from beginning of the treatment. At the first séance there is nearly always a little psychical excitement. The patients have demanded a treatment of which the only thing they knew was that it had cured other people in similar conditions as they themselves. Resigned rather than decided they came to the physician wondering what is going to be done to them and whether the maneuvres which cure, when so many other means have failed, are as simple as they have been told[1].

The second time we apply massage, things are no longer the same, we have less of those instinctive movements of resistance on the slightest pain. But several seances are necessary before the patients relax their abdominal muscles as they ought to. In this respect, there are still, as I have said before, great individual differences; some persons are more docile than others. If massage is properly performed, no pain must remain the moment the seance is over.

It is necessary to warn the patients that the sensibility of the massaged parts is always increased after the first few séances. This disappears, however, very soon, and after a week or ten days, the sensitiveness is by far less.

In rather difficult cases the masseur will do well in standing up with his body half inclined. In this position he can dis-

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(1) This remark does not apply except in France where the adoption of gynæcological massage is of recent date. In Sweden this method has made its debut long ago, and the patients submit to this treatment the same as they would to any other without hesitation or fear.

play the greatest amount of strength with the least fatigue. This consideration deserves mention, because it is sometimes necessary to use a great deal of force, especially when the exudates are old and the physical conditions not favorable. Besides local pain, the manipulations sometimes cause, as they do in uterine massage, more or less painful sensations in the neighboring or distant organs. The pains may sometimes be so acute as to cause a great deal of complaint on the part of the patient. I have had to deal with cystalgia, with vesical tenesmus and sensation of pain near the rectum. Some persons felt pain in the region of the left ovary when the right side was being massaged. Others experienced very painful, lancinating pain in the epigastric region. These sensations are very capricious, they are not at all felt during some seances and very pronounced during others.

Generally I have one seance a day. Two or three would be desirable if we had to deal with old, hard and almost insensitive exudates or with remnants of exudates. The treatment lasts from about a fortnight to ninety days, or even longer. The average duration is from three to six weeks. The results obtained in parametritis are at least as good as, even better, than in metritis.

The large exudates are the most obstinate ones. Perhaps it is possible to remove them in some cases by means of massage with one hand or both through the abdominal wall. It is very rare, when the size of the exudate is sufficiently diminished, that we are not obliged to place the fingers as we have mentioned before into the rectum or the vagina as support and to control the strength displayed by the hand massaging through the abdominal wall.

The affections generally disappear in the same order as they appeared. The pain in the loins is often more obstinate than the rest; nervousness and reflex phenomena are likewise stubborn. Constipation generally yields soon. There exists no proportion between the improvement in the intestinal functions, and the diminution of the morbid mass. The gen-

eral amelioration is also obvious. Several of the women treated suffered so much and got so weak, that they could hardly stand up; after three or four weeks of treatment, they nearly always were able to work and to take long walks. We must not forget that almost all these women had undergone various treatments; that most of them tried massage as a last expedient. They entertained but faint hopes as regards a rapid and radical cure by massage. Massage, however, does cure, and that accounts for its existence, and the more we practice it the more it will gain ground. All prejudice must be cast aside when face to face with these results.

We shall now glance at the principal affections of the neighborhood of the uterus, in which we have applied massage.

*Parametritis.*—By parametritis or cellulitis we designate an inflammation of the pelvic cellular tissue and by perimetritis an inflammation of the pelvic peritoneum. The etiology of these affections is pretty nearly the same, but their lesions and effects are different. Both do not respond to treatment in the same way; perimetritis is a productive inflammation and neomembranous; it rarely exists without producing adhesions or organized thickenings which are difficult to remove. Parametritis is sometimes only a simple infiltration of the pelvic connective tissue. The differentiation of perimetritis and parametritis which is indispensable from a clinical and therapeutical point of view is artificial. Let me here repeat what I have already referred to, when speaking of parenchymatous metritis. It is inconceivable that we should have a rather extensive inflammation of the pelvic portion of the peritoneal serous membrane with absolute integrity of the subjacent connective tissue, or that in the course of a cellulitis the serous coating should remain unaffected. There are differences in the development and in the lesions. If the lesions are more pronounced on the part of the cellular tissue, they are placed among parametritis. These affections are most often secondary to parturition or miscarriages. They are also observed after operative interferences and prolonged exploratory manipulations undertaken

without antiseptic precautions. In other cases parametritis has a latent or insidious beginning. An acute stage does not occur. The exudation is slowly produced. The patients are only informed of it by the dysmenorrhœa, persisting leucorrhœa, pains in the loins and sometimes other characteristic phenomena of a chronic pelvic affection.

Cases of gonorrhoeic parametritis independent of salpingitis and perimetritis are extremely rare. The gonococcus pass from the uterine cavity into that of the tubes. The peritoneum becomes infected through this avenue and not through the cervical lymphatics.

The affection may be isolated or may be followed by flexions or versions, by ovaritis, periovaritis and fibromata of the uterus.

The extent, the seat, the shape and the consistency of the exudates vary a great deal. I have observed some which were of such size that they filled up the entire pelvis. The lumen of the rectum, the latter being almost entirely surrounded by hard masses, was hardly large enough to allow the passage of faecal matters. It is sometimes difficult to make out the shape of the exudates. At the beginning the exudate proper is surrounded by a zone of puffiness which causes its outline to lose all distinctness. The lesions are often located in the immediate neighborhood of the uterus and on its sides; but sometimes they have their seat so high up in the pelvis that it is almost impossible to reach them by the vaginal route. Exudates confined to Douglas' pouch are not rarely met with. I have seen cases of post-cervical cellulitis and I believe them to be more frequent than they are generally thought to be. As they are often found simultaneously with exudates in the fossa of Douglas, they are often confounded with the latter. The consistency varies according to the duration. Sometimes it is rather soft, especially at a stage not far removed from the acute period. In these cases the results are naturally affected by massage. These exudates are far easier to cure a short time after confinement than later on. At this moment the exudate participates in the general

state of the pelvic tissues. When soft and slightly infiltrated these tissues are for some time the seat of a very active absorption. It is not very difficult then to cause the dissappearance of these exudates by slightly favoring this process. It is quite a different matter when fibrous transformation has taken place. I shall not dwell upon the formation of adhesions, because they are the direct outcome of perimetritis. The exudate may undergo a secondary retraction and form a compact, hard mass, comparable to the inodular masses of big scars. It goes without saying that these changes may influence the broad ligament in each side, as is easily explained by the production of uterine deviations. I have the opportunity of returning to this subject.

The shape, the seat and the consistencies are modified at a certain period in the course of treatment. These changes sometimes allow us to detect phenomena which had escaped our first examinations. In one of my patients a very firm exudate as big as a fist, was found in the posterior part of the right broad ligament. The uterus, measuring 9 cm. in length, was rather movable and retroverted. The neck, big, elongated and cylindrical. Massage soon brought about evident amelioration. But after diminution in size of the exudate it was found that a nodule much harder than the rest remained, and that it was attached to the uterus by a broad pedicle (fibroma).

The application of massage in the treatment of parametritis involves various questions. It is necessary to answer these in order not to meet with any disappointments. When should massage be begun? What sort of massage has to be performed? I answer to the first question categorically. Treatment must never be begun as long as we believe that the acute stage has not subsided. If the patients experience chilly sensations, if there exists an evening rise of temperature, if the pulse is more frequent than it ought to be, do not begin it. This is the rule which we must always follow. Even after the acute period is entirely over it is sometimes still necessary to abstain from beginning the treatment. This is what happens, if through one cause or another secondary suppuration is produced in the

thickness of the exudates. The purulent sac is liable to rupture and to have its contents pass into the peritoneal cavity. Surely no one wishes to be exposed to such unfortunate mishaps. Even if this accident does not happen, it is never wise to employ a method which favors absorption, when the material to be absorbed contains septic elements.

The manipulation which answers best of all is petrissage, employed in exudates which are massed together in the form of tumors and performed from the periphery towards the center. In those exudates which are flat or form more or less long or dense bands, stretching is also useful. The word petrissage must not always be taken in its literal sense. It would be wrong to display too much force at a relatively short period after confinement. It is preferable to resort to slight and graduated friction which does not produce lacerations and which does not expose us to acute attacks. When, on the contrary, we have to deal with big, hard masses, a certain amount of force is indicated. We are often obliged to massage with the arm flexed and to press as hard as possible, else we might work for weeks and weeks, and never influence the exudate in the slightest degree. It is fortunate that in these cases we are not obliged to press the abdominal wall down very much. This becomes only necessary when a large part of the exudate has been absorbed and the deeply situated portions alone subsist. At this stage the cure has already advanced, the patients are accustomed to the manipulations and much less difficulties are experienced than at the beginning.

Some years ago the combination of massage with other methods was spoken of. I have already mentioned what I think of Swedish gymnastics. I am no more of an advocate of general baths, electricity and hot vaginal injections as advised by Emmett.

Some physicians use these alone and maintain that they obtain good results. How do they act? I do not quite understand it. Perhaps by the mechanical irritation which they ex-

ert on the exudate through the vaginal walls. This would be a sort of mediate and indirect massage. On the other hand, we must admit that the vaginal injections provoke local congestion which favors the absorption of the preformed products. They may act in the same way as the menstrual period does. I have several times had recourse to this measure. It is inoffensive and I have never seen it produce any accidents. But I have never seen it hasten the cure to any appreciable extent either. If we have to deal with a recent case, with a rather soft, limited exudate, its absorption will soon be produced by massage alone. If on the other hand we are confronted with a dense, fibrous mass, neither baths nor injections will be of any use[1].

There are, properly speaking, two cures, that which the physician pronounces as such and the one announced by the patient. Unfortuately the former is not always absolutely and completely dependent upon the latter. After the patient has entirely gotten rid of the symptoms she complained of and after she declares that she is cured, because she suffers no longer, she gains flesh and strength and is able to walk about and do her work without any inconvenience, the physician will often find to his sorrow that inflammatory remains persist. If we have to deal with patient persons who prefer to continue the treatment rather than to retain a local lesion, which, however slight it may be, will always to a certain extent expose to relapses, we shall very frequently succeed in overcoming all. But it is rare to meet a woman who reasons in this way, especially among the lower classes. It is in vain that you explain to them their position and what they may expect in future. Most of them answer that they are satisfied as it is. They always

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(1) In an article published last spring in La Semaine Médicale, Mr. Reclus tells how he was able, through the application of hot vaginal douches, to cause the disappearance in a very short time of infiltrations in the broad ligaments. But he hastens to add that, at the same time, although only as an adjuvant, he employed gentle massage. I think Mr. Reclus is mistaken, when he regards the employment of massage as only an accessory expedient, instead of making it, according to my opinion, play the principal part.

hope that these pessimitic ideas will not be realized, and that they will not be attacked any more by affections similar to those which they have just been cured of. Sometimes they are right. Some of them, in whom inflammatory processes remained behind, did enjoy good health for several years after the treatment. However, it is a wise plan not to finish the treatment too soon. Better to wait until the next menstrual period is over. It may happen that women who were all right are surprised to see the one or the other symptom return. This is not very serious and only prolongs the treatment for a short time.

### OBSERVATION XXXII.

*Parametritis.—Retroversion.—Massage.—Cure.*

Mrs. O. M., 23 years old. Chloroanæmic. First menstruation at the age of 16. Habitual, greenish-white leucorrhœal discharge. Married at 20. Delivered the following year. Five years later general lassitude; pain in the loins; swelling of the abdomen after meals; increase of leucorrhœal discharge. Oedema of the legs. One day while menstruating and while working at the sewing machine for a long time, she was taken sick with chills, fever and nausea. Stayed in bed a fortnight. Very sharp hypogastric pains. Cataplasms saturated with laudanum. Since that time she is suffering constantly. Hypogastric pain noticeably increased on walking and on sudden and quick movements; twitching on both sides, especially on the left side, radiating into the legs. Injections of tannin. Pain at the menstrual period. Frequent urination (10 to 12 times a day); impossible for her to use the machine. Complaints of weakness. Shortness of breath on walking up stairs. Symptoms of nervous irritability, palpitation. Orifice of the uterine neck partly open; bleeds easily when touched. Ulceration confined to the anterior uterus is a little increased in size, hard and retroverted. Slightly movable, pushed to left by a voluminous exudate. It is of irregular shape, very sensitive to touch, and seated in the right broad ligament.

The treatment lasted rather long before any results were produced. The exudate disappeared to a great extent. Then two hard tendinous cords separated by a space of the size of the breadth of one's thumb were discovered. The cords diverge, and as they do so they seem to get smaller and are directed toward the lateral parts of the pelvis in starting from the edges of the uterus. One of them appears to be as large as a probe, the other one as large as a style; both are very sensitive to pressure. After two months of treatment nothing but a small induration remained in the outer part of the right broad ligament. This induration was almost insensitive to touch. The uterus is movable, easily displaced to the left, but returns at once to the right; ulceration healed without any other treatment. No more dysmenorrhoea nor frequent urination; leucorrhœa very slight and only after the menstrual period.

Less nervous excitation. The treatment begun on April 9, 1890, was completed on June 20. The patient was shown at the clinic of Péan at that time. In October, 1891, same state of health.

## OBSERVATION XXXIII.

*Parametritis.—Salpingitis.—Left Periovaritis.—Massage.—Cure.*

Mrs. L., 32 years old, laundress. Four years ago, after sudden exertion she felt violent pains in the loins and the abdomen. Fever, chills, swelling and sensitiveness of the abdomen. She stayed in bed more than a month and could not resume her work until several weeks later. Continual pain, more acute when she is fatigued. Pains in the loins and the groins. Sensation of heaviness in the abdomen, and expulsive pain, tenesmus. Dragging sensation in the anus. Frequent urination, especially during the time of the menses. Habitual constipation. She remains sometimes 2 or 3 days without any movement. Constipation alternates with diarrhœa. Dyspareunia, such that for a long time sexual intercourse was impossible. Cauterization (Paquelin) and internal medications without any results. At the beginning of November, 1889, she suddenly experienced pains in the loins while carrying a big parcel of linen to the wash house (she then had her menses). This pain was so violent that she had to drop her linen, be brought home in a carriage and immediately go to bed. Constant pain in the form of colic in the loins, abdomen sensitive to pressure. Poultices saturated with laudanum. Having been treated for some time at home without any result, she sought admission into the Hospital Saint Louis (M. Péan's clinic). This was the period when I saw her for the first time, on January 10, 1890.

Besides the symptoms above referred to she complains of violent pain in the right hypogastric region. She is very weak. Uterus retroflexed, voluminous, soft and sensitive to touch. Impossibility of imparting the slightest movement to it. It is fixed by an exudate which is developed to a large size on the left side, and very painful to pressure. This exudate reveals to the touch a sensation of resistance in the pouch of Douglas. The left tube is distended and of the size of a finger. Along its outer extremity it is firmly adherent to the anterior abdominal wall (old inflammatory adhesions). On the right side periovaritis. Massage by the rectal route very painful at the beginning, sensibility diminished by the administration of belladonna suppositories. After seven weeks of treatment the inflammatory products have disappeared and the uterus has become quite movable,—but its defective position remains still the same (there has only been an interruption of five days during the menstrual period). The uterus is considerably smaller, has become more resistant and is no longer sensitive to touch. The periovaritis has been overcome after three weeks of massage by the bimanual method, i. e., recto abdominal. It did not seem possible to touch the tuba adhesions, so thick and rigid did they appear. I feared to provoke a rupture by massage and stretching. February 28, 1890, all the affections she complained of have disappeared. No pains in the left side nor in the loins, regular daily movement; no difficulty in walking;

no dyspareunia. March, 1892, I showed her at the Hospital St. Louis. She declared that she had not felt anything since she had left the hospital, more than two years ago.

## OBSERVATION XXXIV.

*Left Parametritis and Salpingitis.—Parametritis and uterine fibroid on the right side.—Massage.—Partial disappearance of the affections.*

Mrs. L., 41 years of age, of Noisy-le-Sec. Had never been pregnant. Menstruation generally regular, lasting four or five days. Twenty years age, cauterization of the uterine neck in order to cure an affection having as its principal symptom a leucorrhœal discharge. In the course of the treatment she experienced one day violent and sudden pain in the abdomen, accompanied by chills and fever; abdomen distended, very sensitive to pressure, vomiting; cataplasms, injections of a decoction of marshmallow, vesicatories at different times. She stays in bed for three months. After getting up again application of tincture of iodine for six months. Sitzbaths. Her condition improves gradually, but she does not recover completely. After a rather long walk she was obliged to stay in bed, so exhausted did she feel, and she complained of hypogastric and abdominal pains. These latter especially on the right side. She is unable to assume the erect posture for any length of time. She experiences a sensation of pressure, downwards and to the right, as if a bar was pressing on her abdomen; frequent urination. The menstruation is always regular and the flow as copious as formerly; dysmenorrhœa. Pain in the loins, shooting pain in the right hypogastric region. Obstinate constipation. No action of the bowels, without enemata. For a number of years has gone to several clinics. Various diagnoses followed without much benefit; different internal, as well as external treatments met with temporary relief. I saw the patient for the first time in 1890, at the clinic of Péan.

Examination was difficult because of her corpulency. Uterus of abnormal size (9.5 cm.), firmer than in normal conditions and retroverted. On examination by the rectum, it is found that the uterus is enclosed between two hard tumors, the larger one of which almost completely fills the left half of the small pelvis, compresses the rectum and extends backward as far as the sacrum. It does, however, not seem to be fixed to it. On bimanual examination we find that it reaches as high as the iliac crest; the ovaries and the left tube are contained in this tumor. The uterine body is separated from it by a small furrow. The tumor on the right side is of the size of one's fist. Neither this one nor the former is sensitive to pressure. The right one seems to be partly formed by an exudate in the broad ligament and partly by a fibroma.

This supposition was verified by the results of massage. After 6 or 7 weeks the inflammatory exudate disappears and the fibroid alone remains, so that it is easy to appreciate its limits. It is of the size of an egg and adherent to the uterine neck by a broad pedicle.

After 2½ months of energetic massage through the abdomen with both hands, no other trace of the left tumor was found, except a thin layer of indurated tissue around the tube.[1]

This tube had increased in size and become as big as a thumb. I could distinctly feel it to contain some fluid. This I had not been able to feel before massage. The uterus had gotten a little smaller and become almost detached from the tumor and partly movable. The ovary was fixed to the tube by a thin adhesion. I succeeded in freeing it still more by dissection. I did not think it wise to go on with massage in the neighborhood of the tube, for fear of a rupture. The patient did no longer feel the slightest pain on the left side. On the right side, corresponding to the fibrous tumor, she still complained of pain from time to time. The bowels moved almost every day. Her general state of health had considerably improved.

She came to the clinic April 10, 1890. In December of the same year she was in the same state of health as at the end of the treatment.

*Perimetritis.*—Massage is useful in these affections, therefore it is indicated; but on the whole the results are not as good as in parametritis. Perimetritis has an evident and constant tendency to cause the production of membranes. These almost always leave behind adhesions, after the acute stage is over; tubo-ovarian adhesions, adhesions of the tubes and the uterus to the intestines, to the pelvic walls, the bladder, etc. It seems difficult for us to understand at first how a perimetritic exudate can be produced in the precervical space. At a certain period this exudate is partly liquid. Under the influence of gravity it sinks down into the deep parts and is collected in the fossa of Douglas. I have never seen precervical parametritis. This rarity is explained by the fact that the space between the neck of the uterus and the bladder is poor in connective tissue; but the inflammation is not limited to this tissue alone; it soon reaches the serous coat and adhesions are formed.

This kind of lesions is more frequent behind the uterus and the vagina. Authors are far from being agreed on their origin

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(1) The tumor having diminished in size, massage was performed through the abdomen and the vagina; i. e., by the bimanual method, during the last 5 weeks of treatment.

and their precise seat. Most authors consider the affection to start from the peritoneum. My personal experience does not agree with them in this; retro-cervical perimetritis seems to me to be more frequent than is generally thought, and I think that most often it is confounded with intra-peritoneal exudates.

It is well to insist on two apparently contradictory facts as regards perimetritis; its apparent rarity and its real frequency. The patients affected with perimetritis who came to see me or whom I had the opportunity of seeing at the Hospital Saint Louis, were less numerous than those affected with parametritis. Clinicians and anatomo-pathologists agree on this point, that adhesions of the pelvic organs are much more frequent than is believed. They are often found at the autopsy on women who died from affections which were not at all connected with the uterus or its vicinity, and who had never complained of any pain in these parts. It may be concluded from this that adhesions secondary to slight perimetritis are often quite well tolerated.

The obliteration of the abdominal extremity of the tube through a circumscribed inflammation is too well known for me to call the attention to it. It is of little importance, if this obliteration depends on a salpingitis or a salpingo-ovaritis, as is generally the case.

All those who have studied gynaecologic massage and Prochownik in particular have rightly remarked that its application is not quite so inoffensive in perimetritis as it is in parametritis.

The diagnosis of the former cases is difficult to make even to experienced practitioners. The extreme sensitiveness which exists in these conditions is an obstacle to the exploration. As a rule there are adhesions to the intestines, the tubes, the bladder, etc. We might very easily tear the walls of these organs by too rough a manipulation. The effusion of a part of their contents into the peritoneal cavity would lead to consequences very easy to foresee. Extreme precautions are necessary in these cases. They are also indicated when adhesions of the

tube to the surrounding parts exist. I do not here speak of adhesions to the ovary, and they are frequent! The thicker and denser these adhesions are, the more we must be on our guard. Some practitioners might contend that the partial rupture of a tube and the effusion of a small quantity of serous fluid into the abdominal cavity is only of insignificant inconvenience and is easy to repair. The study of tubal affections has made marvelous progress within the last ten years, but an astonishing confidence in one's own sharpsightedness and in the surety of one's diagnosis is necessary in order to affirm that a distended tube contains only inoffensive serous fluid and no pus[1]. We would commit an unpardonable imprudence in stretching the adhesions and tearing them.

Perimetritis often terminates by the formation of encysted liquid collections. In regard to these the same may be said as in regard to affections of the tubes. We would be exposed to a great many dangers and risks, were we to break these cysts and diffuse their contents into the peritoneal cavity, because there are grave doubts as to their nature and harmlessness. I know very well that the ruptures have not always caused fatal consequences, but in spite of this I do not advise anybody to face them.

I have argued against chloroform narcosis, when it is not indispensable, and I have stated why I don't approve of it. We are, however, obliged to resort to it quite frequently in perimetritis. The patients suffer sometimes so much at the slightest touch that it is impossible to conduct a proper examination through the abdominal route without it.[2]

The results of the treatment in perimetritis are less satis-

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(1) Evening rise of temperature and similar symptoms which might lead one to think of suppurative salpingitis are only of relative diagnostic value.

(2) I only use narcosis at the beginning of the treatment in order to make a methodical examination and never employ it in the course of the treatment.

factory than in parametritis. In these latter we have more than once obtained complete cure. Independently of the subjective amelioration we obtained the disappearance of the exudate, a real restitutio ad integrum.

We must not expect to be able to remove the adhesions of the perimetritis. It is achieving a great deal if we can attenuate them, render them less firm, obtain marked improvement both in the local and in the general state, and accomplish the complete removal of the painful symptoms. In other cases it is useless to prolong the treatment, as no benefit could be derived by doing so. These cases properly belong into the realm of surgery.

I have already stated that cases of rectro-cervical perimetritis are more frequent than earlier authors thought them to be and that they are often confounded with intraperitoneal exudates. If the parametritis is isolated or if there is at the same time perimetritis or parametritis at this level, as is nearly always the case, massage must always be performed according to certain definite rules. "Malning" is used here. The forefinger is introduced through the anus as far as the upper border of the exudate on which we perform circular frictions. These latter must be very gentle at the beginning. If the exudate extends along the pelvic wall towards the sacrum, we must operate laterally in following an antero-posterior direction. At the beginning this manipulation is painful, but the sensibility diminishes gradually. It is very fatiguing to the physician. The peripheral parts of the exudate are absorbed first; the nearer we get to the end of treatment, the further the morbid tissue which we wish to influence seems to get away from us. The manipulations become more difficult. Quite frequently we are obliged to interrupt the manipulations several times during a seance. Of course during these interruptions the finger remains in the rectum. It is well to support the pelvis with the free arm or to put a cushion underneath it, in order to reach higher up into the pelvis.

## OBSERVATION XXXV.

*Perimetritis.—Small Cicatricial Cord in the Broad Ligament.—Chronic Salpingo-Ovaritis.—Different Local and General Affections. Massage.—Cure.*

Miss B., 37 years old, governess.

This patient had been rather corpulent up to a few years ago, but since that time she has gotten considerably thinner. Toward the end of adolescence chloro-anæmic. Menstrual flow not copious; the blood is of a pale color. In 1881 the dysmenorrhœa was such that a surgeon of Paris was obliged to treat her by incision of the uterine neck (bilateral incision). This procedure was followed by a sudden aggravation of the patient's condition. Fever, chills, rigors, painful swelling of the abdomen and vomiting. After a few days the inflammation became limited to the left side. Poultices saturated with laudanum, tincture of iodine, mercurial ointment. For 3 weeks obvious improvement, but at the second menstruation following the treatment, the pain returned, and so violently that she had to stay in bed two weeks. Since then she has never been quite well. Pain in the left side so intense that she could hardly stand up during the menses. Blisters only produced temporary improvement. She was obliged to leave her position and to return to her family. I saw her in December, 1883. She then complained of a copious, yellowish leucorrhœal discharge. Lately the discharge has assumed a thick and creamy appearance. Dysuria, difficulty in micturition, alternating diarrhœa with constipation, swollen abdomen, palpitation of the heart. The gastralgia has lately been very much improved by bromide of potash. Habitual sensation of constriction of the chest, weakness, anæmia. Various tonic preparations have been of no use. Anterior vaginal wall rather laxed. Slight sinking of the uterus. Bimanual examination easy, because of the patient's emaciation. Retroverted uterus, lenght 8 cm. by the hysterometer. Harder than normal. Its mobility was diminished, but it was impossible for me to tell exactly within what limits. The left tube and ovary are agglutinated and form a small tumor, which is very sensitive to pressure, and only susceptible of a relatively small displacement. Several thin cords start from this tumor and continue in the direction of the sacro-iliac articulation.

The right broad ligament seems less elastic than it ought to be, but it is only when I draw these cords to the opposite side that I feel a small cord starting from the corresponding edge of the uterus. Nothing abnormal on the left side. Massage and stretching. They have to be performed very gently. On the fifth day the sensitiveness is somewhat increased, but there is no febrile movement. The treatment is interrupted. Absolute rest. Then after 10 days it is resumed. No other accident. After 3 weeks I am beginning to be able to distinguish the tube and ovary from the rest of the morbid mass. At this moment the patient has to stop treatment, because of urgent family affairs. I continue the treatment a month later. Four weeks after this the ovary and the tube have become quite free. They are no longer adhering to each other, nor to the pelvic walls. There is a dilatation of the tube as

big as one's small finger, corresponding especially to its fimbriated extremity. The thin cords, which I could feel before, are no longer perceptible to the touch. The broad ligament on the right side has regained its physiological elasticity. The uterus has become movable. Her general state of health is very satisfactory. Three months after the end of the treatment I met this patient—she had resumed her position as governess. At that time the uterus was less firm than at the last examination, 7.5 cm. long. No pain in the left side, except after a very long walk. The menses are less painful than in former years. The leucorrhœa, which lost more and more of its thick consistency, has disappeared. At the last menstruation the blood seemed quite normal. It is redder than it used to be. Dysuria still present. Digestion excellent. No swelling of the abdomen. Walks without any difficulty; no gastralgia. She has only had gastralgia twice since the treatment was begun, and then the attacks were far less violent than before. The patient has gained strength, even flesh. No complication of any nervous affection.

## OBSERVATION XXXVI.

*Five Years Old Perimetritis.—Cords in the Broad Ligament.—Dysmenorrhœa.—Dyspareunia.—Massage.—Cure.*

Mrs. M., 31 years old. In 1881 difficult childbed, after which she was obliged to stay in bed for several weeks. Later on thick leucorrhœal discharge. General uneasiness in the hypogastrium, especially on the right side, increased by pressure. In 1884 she consults a specialist, who prescribes vaginal injections with very strong solutions. Iodized plugs. Temporary improvement. Cure at Kreuznach, the following year at Franzensbad. Transitory amelioration. Violent pain during the menses; stays in bed during the whole period. After sexual intercourse, pains and occasional vomiting. I saw the patient in the spring of 1888. Uterus larger than normal, 8 cm.; retroflexed—only slightly movable. A band starting from the upper limit of the vaginal portion of the neck and apparently tending upward and backward into the left broad ligament. It is impossible to reach its upper limit with the fingers. It is firm and sensitive on pressure. The right ovary, which is increased in size (it is as big as a pigeon's egg) is attached by means of a rather broad band to the outer part of the sacro-iliac symphysis.

Examination and massage are considerably facilitated by the thinness of the abdominal walls. After 5 weeks, the uterus is a little more movable and the patient feels better. Three weeks later I only felt the lowest part of the cord. The ovary, which is smaller and less firm, is relatively free. The adhesions still remain there; they are lengthened, however, after two months stretching. The vicious position of uterus remains. The patient is no longer suffering. She is delighted at the obtained result, and is ready to leave for the seaside. But before leaving I have her promise to return immediately if any accidents should turn up.

I saw her at the end of November. She declared that during the summer she had experienced almost nothing, but that for 3 weeks she did not feel so well. I continued the treatment in order to cause the disappearance of the band I referred to, because I thought that that was the cause of the relapse. After a fortnight everything had disappeared. The uterus is of the same size. As she still remained for two months in Paris, with her husband, I had the opportunity of seeing her several times. Her general state of health was excellent. During her last menstrual period she felt only slight pain on the right side; leucorrhœa insignificant; no longer any dyspareunia. I heard from her again the following May. Her state of health was the same.

*Changes in form and position of the uterus.*

In my two works on gynaecological massage I have often alluded to the different versions and flexions of the uterus. As these modifications of the uterine position and form are very frequently the result of retraction of the inflammatory bands and adhesions and as these themselves are the product of para- and perimetritis it has seemed to me advantageous to reserve the study of the former till after the study of the latter. It will thus be more easy to understand their importance as regards the effect of massage, and see what particular conclusions may be drawn from this circumstance and what results may be obtained from the treatment.

The lateral flexions or lateral versions do not produce any symptoms as long as the uterus is movable. If practitioners are agreed on this point it is not the same as when you speak of versions and flexions forwards and backwards. Then the opinions differ widely.

Many physicians still believe that these malpositions and malformations constitute the fundamental indication; that the inflammatory affections which follow them are simply accessory phenomena; that treatment of these is only palliative and cannot bring about amelioration of any duration as long as the deviations persist. To this I will reply that a congenital retroflexion can exist without the patient's knowledge. These deviations have often been found at autopsies in cases where they had never been suspected during lifetime. Occasionally, too, and so to say, by mere chance, they have

been met with during examinations conducted for other purposes than those which interest us here. As soon as inflammatory symptoms arise the picture changes. Moreover, the cases I have treated in private practice since more than 20 years, as well as those which I observed during my second sojourn of two years at Hospital St. Louis (clinic of Péan), demonstrated most clearly that the primary affection is that of the uterus, and the concomitant displacement is only to be regarded as a secondary phenomenon. Some of the cases observed in the hospital went as long as 15 months to two years without any relapse of symptoms (with persistent displacement).

An adjuvtnt of value here is absolute discretion towards the patient. If she declares that she is cured, take care not to contradict her, if you find nothing more than the persistent flexion or version. You may follow her up for months; she will ever repeat that she does not suffer, so that you will have to believe her. If, unfortunately, you tell her or give her to understand that the uterus is not quite in its proper place, you may be sure of seeing her the following day. Then she will tell you that her pain has come back, that the anomaly of the deviation of the uterus is constantly annoying her. She will only cease to suffer after she has been persuaded that all is in its proper place.

I still maintain that version or flexion is in itself insignificant and I shall only concede that these two conditions may in some cases contribute to the persistence of the concomitant chronic uterine trouble, perhaps be a cause of its relapse.[1]

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(1) It was with real satisfaction that I saw, at the last gynæcological congress in Geneva, my distinguished colleague in Paris, Dr. Pozzi, together with others, defending the ideas which I always held on the matter in question, when he said among others: "The displacement backwards is here only a epiphenomène (external phenomena). The principal morbid element is not the displacement, not even the adhesions, but rather the morbid state of the uterus, the tube and the ovary — — — and the treatment must above all be based on the extent of the lesions of the appendages and the uterus.

The masseur must not mind insignificant lesions which are of almost no inconvenience to the patients. What interests him most are bands not necessarily very extensive, cords, membranes and callous masses. Some of my colleagues have their patients go to sleep, and then they tear these bands. This procedure seems so bold to me, that I have never imitated it and do not advise anybody to try it. Those powerful tensions which Schulze recommended some years ago, and which are executed during chloroform narcosis, seems to me to render us liable quite frequently, if not always, to produce lacerations which I dread. We proceed as in massage performed simultaneously through the abdominal wall and vagina or rectum, but with very slight efforts, far from violence. However positive our diagnosis may be, however delicate and experienced the touch may be, it is impossible to carry out the manœuvres with enough percision as not to go beyond the end in view. I prefer proceeding slowly and systematically, the patient being awake, because her sensibility is an almost infallible guide. We have thus a useful indication which shows that at a certain moment we must stop, unless we wish to produce a sudden stretching and often a deep laceration. Prochownik sometimes observed acute attacks of circumscribed perimetritis in patients whom he treated; he is convinced that they were due to laceration of adhesions. These lacerations would not have been produced, if the patient had been awake. Fortunately these accidents were quickly cured and had never any bad effect.

A priori we are very much inclined to be opposed to violent distension in a person who has previously been rendered unconscious. There is imminent danger of lacerating delicate organs, such as the internal genital apparatus and the intestines, which are hidden from view and surrounded by abundant connective tissue. These organs are covered by a serous membrane, which responds very readily to certain irritations and

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Many fixed retrodeviations are indolent; — — — morbid symptoms arise if these displaced and adherent uteri are again affected by metritis."

all this seems more than sufficient to have us reject this procedure. If Schulze and many others have employed it nevertheless, it is because uterine displacements occupied in their minds too important a position. Persuaded to restore above all the uterus to its physiological position, physicians will pull so hard on the tendinous bands, which are preventing rectification, that they at once either stretch these bands or tear them. There is no mean between the two; either they distend them or they lacerate them. It seems to me that we ought as a rule strive to adopt such procedures as will render it possible for us to attain our end and not go beyond it.

In the chapter on parametritis I have repeatedly attended to pétrissage. We cannot very well knead a cord consisting of connective tissue. This must first be stretched; but I do not want any sudden tension during sleep.

Tension must only be begun after complete solidification of the exudate has taken place, that is, after the absorption of the liquid elements which infiltrate the tissues before their retraction. In this way the danger of a consecutive acute attack is very much lessened. This rule must only be abstained from in very rare cases, as for instance, when we have to stimulate the absorption of parametritic remains, the largest part of which has disappeared through pétrissage, and even then we must be very cautious.

The adhesions are little by little distended by means of the forefinger, without going too far at one séance; stretching does not mean breaking. After we have succeeded in stretching the tissues, no matter how little, it is sufficient. This proves that with patience we may attain our object without any risks to the patient. This manipulation is repeated several times during the sitting. It causes some local irritation which is alleviated, however, by slight frictions, performed in direction of the adhesions and above them.

It goes without saying that the rapidity with which the expected result is obtained is inversely proportional to the age and tenacity of the adhesions; if they are soft and extensible,

a few sittings are sufficient. Very strong adhesions require more perseverance. It is better not to continue the treatment, if one is discouraged, because the effects will be tardy. We cannot say how many days or séances the treatment will last. There is but one guide to follow, namely experience: I have sometimes met dense, compact bands which had brought about such a fixation of the uterus, that I questioned myself whether it is worth while trying to distend them. After numerous séances I was able to stretch them sufficiently to obtain a rectification of the position of the uterus and sufficient mobility[1]. I have even succeeded in doing this without trying to make use of the temporary diminution in the consistency which sometimes corresponds to the menstrual period.

The stretching force must not be too strong, nor must the adhesions be too much drawn out, or else a local and general irritation is produced. But we must also not fall into the opposite error. If we stop the manipulations as soon as the extremity of the forefinger has touched the bands to be stretched we might as well do nothing at all.

The direction of the force to be applied must be in a line perpendicular to the pelvic wall. It is self-understood that the whole of rather extensive adhesions cannot be attacked at once. I first work on one part and, after this has been stretched, to a certain degree, I pass on to another. This applies to all adhesions, even those of the tubes and ovaries, of which I am going to speak later on.

Although I never treated patients when under the influence of an anæsthetic, I cannot say that we are thus free from all mishaps. The patient's sensibility is not the only thing to be taken into consideration. The physician's muscular sense

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(1) The cords yield and are rendered elastic, but it is only very rarely that they are absorbed. I have sometimes obtained such a distension of the bands, that the uterus which was formerly retained in retroversion by the bands of Douglas' fossa could be restored to its normal position, at least for a moment, and even to slight anteversion.

occupies just as important a place in appreciating the strength that has to be displaced. At the beginning of treatment this sense is not always so acutely developed as later on. In time we acquire that finesse and instinctive appreciation as to how far it is safe to progress without producing any laceration. The accidents, if any do occur, are insignificant; they are for the most part transitory local irritations and in more serious cases are remedied by the usual measures and the interruption of the treatment is only a short one[1].

Adhesions between the fundus of the uterus and the pubic symphysis are rare and occur after precervical perimetritis. They are generally hard and firm adhesions which immobilize the anteflexed uterus. It is only possible to treat them with the thumb introduced into the vagina, the nail being towards the symphysis. Distension must as much as possible be applied to the whole breadth; if the case is a rather difficult one, it is better to have the patient assume the erect posture. The physician is sitting opposite the patient, his left elbow leaning on her left thigh; by gradually raising the limb, he exerts a slow, continuous but sufficiently powerful pressure on the adhesions[2]. As soon as these yield to the repeated stretchings, the uterus becomes so movable that the fingers working through the abdominal wall can advance in front of its anterior surface and meet the thumb[3]. At this moment the patient has to lie down and the stretching process is continued with both hands. It is well to seize the fundus of the uterus, if possible with the

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(1) Brandt uses a particular kind of massage quite appropriate for these accidents. He proceeds in the same way as in acute arthritis or in traumatic articular sanguinious effusions; by means of effleurage or very gentle frictions he has been able, he claims, to cause the disappearance of swellings which were as large as a hen's egg and which developed suddenly within 2 or 3 days.

(2) In this way strength is gained and the strength displayed is better controled.

(3) It is very easy to ascertain this in the normal condition, because the thumb and the other hand are only separated by the abdominal wall, the anterior wall of the vagina and the bladder.

external hand and to push it gently and gradually backwards. In order to facilitate the movements in the opposite direction, you will do well in pushing the neck forwards, with two fingers in the posterior cul-de-sac.

These manipulations are powerful, but the adhesions which have to be overcome are sometimes so tenacious that treatment has to extend over two months before the uterus regains its mobility.

Lateral displacements are very frequent occurrences. Their treatment, by stretching the bands, does not present anything special[1]. Their treatment is more difficult, when they are combined with backward displacements (flexions or versions), produced by adhesions. The conditions are still less satisfactory when the displacements are bilateral, and so much the more when the abdominal wall presents at the same time unexpected obstacles. The adhesions are then very hard to stretch.

Sound judgment and clinical experiences are demanded to know where and how to attack these adhesions; the patient must have confidence in the method and a great deal of perseverance. I have had to treat several women affected in this way, and never was my patience put to a severer test. Two months or even more are sometimes necessary before any result can be attained. The manipulations are painful and fatiguing. Very often but relative mobility is obtained. If we succeed in bringing the fundus of the uterus on a level with the sacral promontary or a little higher up, a great deal has been accomplished[2]. However incomplete the result may be, it must not be despised. Whenever I did obtain only slight results, I

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(1) One or two fingers are introduced either into the vagina or into the rectum behind the inflammatory products, while the other hand, if possible, massages simultaneously through the abdominal wall. The uterus may also be used as a sort of lever; it is seized as high up as possible and is pushed without violence in a direction opposite to the cicatricial retraction.

(2) At this moment it would be well, in order to exert some tension on the bilateral adhesions to bring the uterus directly forward.

was always gratified to see that nearly all the symptoms the patients complained of had disappeared.

The uterus may be retained in a posterior position either by narrow or broad bands. In the former case, the conditions are good, in the second one they are not. The obstacles are at times insurmountable.

My method of procedure in the first case is as follows: The patient is put in the dorsal position. I introduce the right fore finger above the normal constriction which the rectum presents so as to distend the fibro-tendinous bands. With the same finger I bring from time to time the uterus forward, changing place from one instant to another. When the adhesions are sufficiently stretched for the uterus to be replaced, I seize it with the hand and use it as a lever in order to complete the tension.

In slight affections I often succeed in restoring the mobility of the uterus within two or three weeks. Sometimes it happens that the results are less satisfactory and it is only after a rather long treatment that a few adhesions give way. This partial result is sufficient to ameliorate the subjective symptoms.

There is nothing to be obtained in cases of broad recto-uterine adhesions. It is not a difficult matter to bring the uterus forward, but unfortunately under influence of the traction exerted by the fibres of the rectum the uterus returns to its former position almost immediately. In this case I follow Brandt's advice. The hand seizes the fundus of the uterus through the abdominal wall and slides as deep as possible along the posterior pelvic wall[1]. Two fingers are introduced into the vagina and placed on the vaginal portion. They[2]

(1) The patient may be made to assume the geno-cubital position and the body of the uterus is then pushed forwards and downwards by the forefinger; in order to facilitate this procedure the cervix is at the same time pushed upwards and backwards with two fingers of the other hand.

(2) The fingers are crossed so that the neck is fixed as with a figure of 8-shaped pessary.

push the uterus upwards and backwards while the other hand tries to reach the insertion of the adhesions to the rectum. At this moment the vaginal fingers are withdrawn and one of them (the fore finger) is introduced into the rectum, where it exercises, through the rectal wall, frictions on the posterior surface of the uterus and at the same time tries to push its body forwards and downwards. All violence must be avoided; this manipulation involves fatigue and, therefore, requires resting from time to time. The adhesions are very rarely entirely loosened; sometimes they are not loosened at all: in most cases only partial liberation is produced. If the lesions persist, their symptoms may become alleviated after disappearance of the initial process.

*Influence of Para- and Perimetritis Upon the State of the Uterus Itself.*

Chronic Metritis (Endometritis).—Ulcerations of the neck and Uterine Catarrh.—Results of Massage.

We have already studied the treatment of uterine affections by massage. If we were to take no notice of them in this connection, it might be concluded that the affections of para and peri-metrium would in no way influence the uterus itself. We never had any intention of supporting such an idea. On the contrary, it is very unusual for the uterus to remain unaffected in chronic para- and perimetritis. There are nearly always disturbances, if no others than those resulting from a veinous stagnation. This stasis is produced whenever a rather voluminous and hard exudate exists in the thickness of the broad ligaments. This is so much the more the case when the tissue is of a fibrous consistency and compresses certain veins of some size. The tumefaction, the chronic obstruction of the uterus, correspond to this stage. There are secondary conditions which disappear when, thanks to massage and distension, the normal relations of the organs have been restored and when compression ceases. As a rule the cure of perimetritis or parametritis is followed by the disappearance or diminution of the symptoms due to passive congestion of the uterus. We

are often surprised to find ulcerations which had resisted all kinds of treatment disappear spontaneously. If, however, this state of persisting congestion has brought on greater firmness of the organ, it is difficult to obtain its diminution without a special kind of massage.

I have alluded to *ulcerations*. They very often frighten the patients as well as the physicians, although without cause. They are generally rather obstinate and seem to defy the most energetic applications of caustics. But this persistency ceases as by enchantment as soon as the ulcer becomes an isolated affection and as soon as parametric exudation, adhesions or metritis resp. endometritis no longer exist. It always appeared to me that this lesion is a nutritive disturbance secondary to venous stagnation, sometimes also caused and always maintained by an irritating flowing. As a rule, when there is no stagnation, the ulcer disappears. No stasis, no ulcer, that's the general rule. When the affections were of old standing, and the ulcers exceptionally large and deep, I have seen them persist after the end of the treatment; but their appearance was so modified that their complete healing could be considered as well nigh at hand. My predictions almost never failed. Two or three months later some of the patients came to see me at my request, and although they had not followed any special treatment, the ulcers were cured. If we wish to hasten the healing, we may resort to superficial cauterization shortly before the end of the treatment. Besides this latter adjuvant is in most cases employed more to satisfy the patients. If they have been told by the physician that they have an ulceration, it is difficult to convince them that it is not serious and that it will get well of itself. A séance is very rarely begun before they ask about it with some anxiety. These ulcers sometimes have an obvious tendency to reappear. They were once cured, but they begin again. In this respect they are very much like varicose ulcers. This peculiarity must not be alarming. As soon as the venous circulation is well regulated, relapses are not longer to be feared.

*Uterine Catarrh* is still one of the common complications of the affections of the peri- or parametrium. It is often primary, but may in some cases be of secondary origin and be produced by the same stasis that gave rise to the ulcerations. At all events its presence suffices to keep up the already existing uterine catarrh. That is the reason why topical medication employed for it has up to the present date achieved so little success. Astringent irritating applications or caustics and injections do not produce any effect. Moreover, the application constitutes a relative contra-indication in the conditions we have to deal with here. Curettage is absolutely contra-indicated. We observe almost always that the affection of the appendages gets in these cases worse after it.

As addition to this chapter and before I proceed to treat of the affections of the tubes and ovaries, I have to say a word or two about an extremely frequent complication of uterine and peri-uterine affections, namely *constipation*. This is all the more important, as it is a condition which torments the patient a great deal, besides being often one of the first symptoms on which the treatment exercises a favorable influence.

Most of my patients almost never have a movement without resorting to enemata.

I have already explained the cause of this symptom when treating of the affections of the internal female genital apparatus. It was formerly claimed that it was of a purely mechanical nature. The uterus, drawn backwards, was supposed to press down on the wall of the rectum thus diminishing its diameter, and as the uterus remained fixed in this position for some time, stenosis which at first was temporary became permanent. I only see one objection to this theory, and that is an important one. Some patients, whose uterus is in its normal situation, in anteflexion or anteversion, suffer from obstinate constipation. Here the cause cannot be compression or any mechanical obstacle to the course of the faecal matters. In other cases, again, where the uterus was in typical retroversion or retroflexion, and where the rectal wall was pressed

down, the bowels acted regularly in spite of this stenosis. One conclusion can only be drawn, namely that too much importance has been attached to mechanical phenomena. Constipation, whatever direction or deviation of the uterus may be, most frequently depends on a sort of reflex paralysis of the muscular fibres of the rectum. This explanation is still better adapted to utero-rectal adhesions than to others. In these conditions it is not even necessary to speak of reflex phenomena. The inflammatory process, having terminated in the formation of adhesions, may have extended to the rectal wall and brought about an infiltration destroying the action of the contractile elements. Thus we would have in the course of uterine affections two kinds of constipation; the one, of a reflex nature, which may be observed even when the rectal wall is intact, the other due to an inflammatory infiltration of the rectal wall and to a partial degeneration of its contractile elements. If it be true that the results derived from a certain treatment reflect the real value of that treatment, then our hypothesis is confirmed by facts. The rapid and complete disappearance of constipation is a common occurrence after massage. It is almost the first symptom to appear and attract the patient's attention. But when we have to deal with a perenchymatous metritis and a parametritis in which the exudate has its seat on one or the other side of the uterus, and not posteriorly, with a perimetritis having produced adhesions anteriorly or to the pelvis, we never touch the rectum. There is no reason to suppose that we have caused the disappearance of an infiltration from the rectal wall or that we have removed a stenosis as soon as the bowels became regular. They also do this in unfavorable cases, as we have seen before, that is, when utero-rectal adhesions exist. This subjective improvement which we may almost always effect is in itself sufficient to justify the use of massage in these cases.

*Diseases of the Tubes and Ovaries.*—Twenty years ago *inflammations of the tubes* were not much spoken of, not even enough because it is quite natural to see how, when those or-

gans are seriously affected in consequence of uterine trouble, this latter circumstance modifies the clinical picture of the case and outlines the treatment. At present, perhaps, too much attention is devoted to diseases of the tubes. One might suppose that their primary and isolated affections dominate the whole pathology of the internal female genital apparatus. This conception, however, is false. Nothing is more rare than a primary and isolated salpingitis or a limited lesion of the tube. Nine times out of ten the starting point of all is an endometritis which little by little progressed towards the orifice and the tubal mucous membrane. Later on a sort of inversion of the terms takes place. The uterus which occupied the first place at the beginning is now but of secondary importance, and the tube takes its place. After the endometritis is improved and cured, the salpingitis persists. These secondary invasions come on almost exclusively through the mucous membrane. Every time we have to treat a peri-uterine affection we must be sure to know the state of the tubes and ovaries. This is not always easy to determine. Sometimes we find towards one of the sides of the pelvic cavity a conglomerated mass, whose nature it is difficult to state precisely. The treatment is a means of getting at the diagnosis. In the proportion as the absorption of the exudate takes place, the different parts which were primarily massed together, are divided and isolated. Then it is often possible to recognize the tube, the ovary and an intestinal loop. In combining tension, performed with the precautions I have mentioned, with pétrissage, you will obtain unexpected results and most often you will succeed in restoring the normal mobility of the organs. Suppose now that the tube has been found and that it is affected? What are we to do? Brandt believes that massage can be attempted in cases of catarrhal salpingitis. He performs gentle stroking inwards, that is to say, from the abdominal end towards the uterine orifice. I have not applied this procedure, because I do not trust it. It is difficult to tell what the distended tube contains. Very often surgeons who thought they had to deal with a small or middle-sized hydro-

salpinx found themselves confronted by a real purulent tube. It is just as difficult to maintain that the escape of pus will take place directly from the tube into the uterus, and that not a drop of pus will get into the abdomen. The peritoneum, which is but little tolerant as regards any kind of a fluid, reacts very unfavorably, when any pus gets into its cavity. Brandt did not advise this manipulation with the firm conviction held by others. If it requires a long time to produce any results he stops. I always believed that it was better never to begin this manipulation than to run the risk of obtaining uncertain results.

My views are quite different in cases of chronic salpingitis which are followed by but an insignificant dilatation of the tubes. The fluid the tubes do contain, is then in a very small quantity and almost always of an inoffensive character. Here massage is indicated and will yield good results. I have often seen salpingitis disappear without any direct intervention after the uterine catarrh was cured. Sometimes I have also seen how a salpingitis forming real small tumors can exist, without giving rise to any symptoms, so soon as the concomitant lesions had disappeared. In one of the cases observed by me the tube was of the size of one's forefinger. It was adherent to the abdominal wall. No symptoms were evidenced which seemed to be connected with this peculiarity, as soon as the concomitant lesions (parametritis resp. perimetritis and cronic metritis) had disappeared. In interstitial salpingitis with increase of the thickness and density of the walls, massage affords good results.

Tubal adhesions belong to those adhesions whose treatment ought not to be neglected. We cannot take enough precaution in loosening or stretching these adhesions, if we do not desire to cause rupture of the tubes and perhaps inflammation of the peritoneum. The index finger is introduced very high up into the rectum posterior to the tube. All pressure on it is to be avoided and we try to reach the adhesions. When these are reached, the finger remains in this position while

light tractions are made by the fingers of the other hand through the abdominal wall. It is possible to operate in the opposite direction and to alternate. The adhesions are then massaged during the same séance, and we complete the séance by gentle and superficial manipulations in order to calm the irritation produced by the former procedures. It is necessary to hug the tube as close as possible, otherwise massage and distension might act on the peritoneum, and this is not our object, instead of on the adhesions. It is useless to add that the tube must under no circumstances be used as a lever in the rectification of uterine deviations[1].

The results of massage in affections of the *ovary* are not to be compared to those obtained in parametritis. It rarely, except in recent cases, leads to complete cure, that is to say, to restitutio ad integrum. If we obtain in chronic cases diminution or disappearance of the pain, we ought to be contented. The ovary nearly always reduces in size in consequence of the treatment. It happens only rarely that it gets back its normal size. When firmer than usual, its consistency is often rendered less so. The extreme sensitiveness especially depending on the periovaritis is alleviated. The treatment may last for two months or even longer, especially when there are adhesions. These adhesions ought to be detached like those of the tube[2]. This is a difficult task, when the ovary is fixed very high up in the pelvis in the vicinity of the sacral promontory. Even after persistent endeavors we obtain but slight stretching, if any at all. The stretching process becomes much more difficult, when the ovaries have sunken into the fossa of Douglas

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(1) I notice in the work cited by Prof. Schauta that he has applied the treatment in question in almost the same cases as I have done, and he says: the results obtained in properly selected cases and in properly executed manipulations are very good. In not a single case did I have to regret a failure or accident. His statistics embody no less than 352 cases.

(2) The adherences to the anterior abdominal wall are also difficult to reach; this probably depends on their being impossible to come at from behind.

and formed adhesions there. The conditions are then unfavorable, unless the adhesions are offering very little resistance and unless they yield from the very beginning. If this be not the case, there is very little result to be hoped for[1].

Within the last years I also applied massage resp. tension in those cases, where after laparotomy or after vaginal operations for pelvic suppurations adhesions remained in the pelvic cavity. These lesions almost always gave rise to real suffering on the part of the patient. I have thus several times been able to exert a most favorable influence and spare the patient a second operation.

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(1) The ovary is not well adapted to these manipulations; Ziegenspeck's experiences have showed that the parietal peritoneum may be displaced on the subjacent connective tissue.

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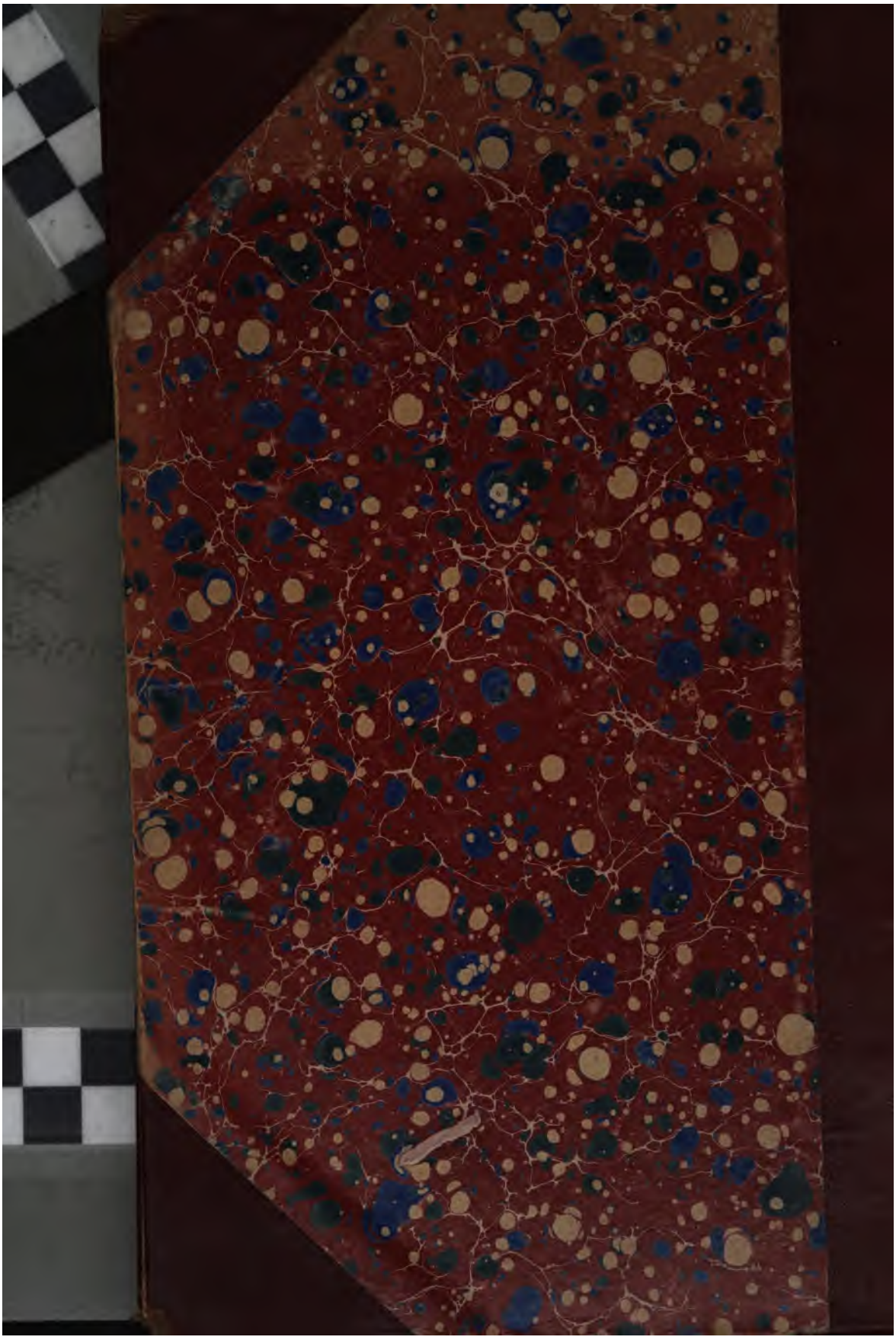
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